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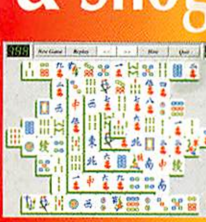
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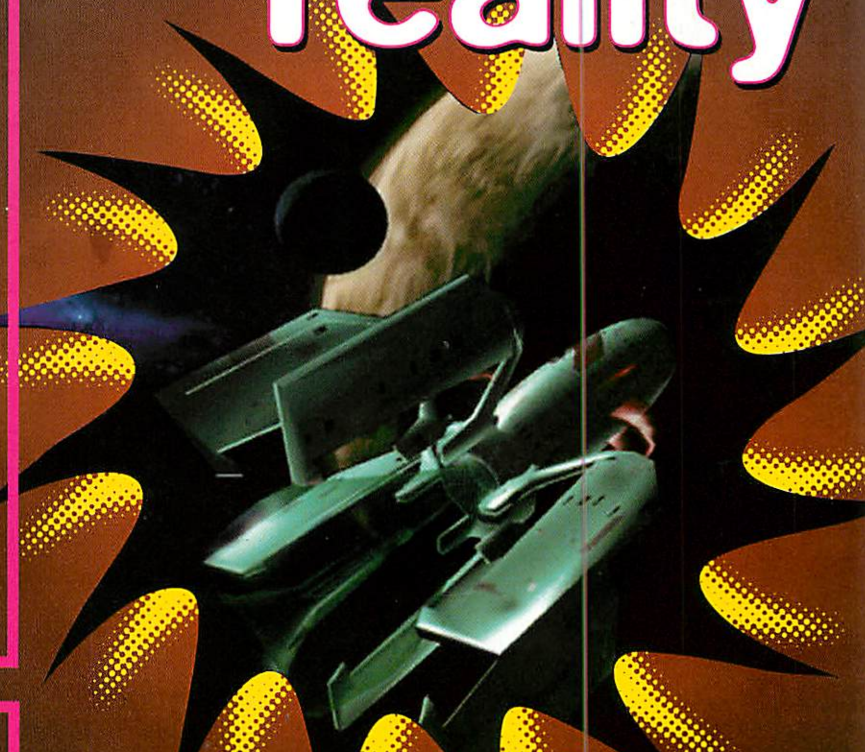
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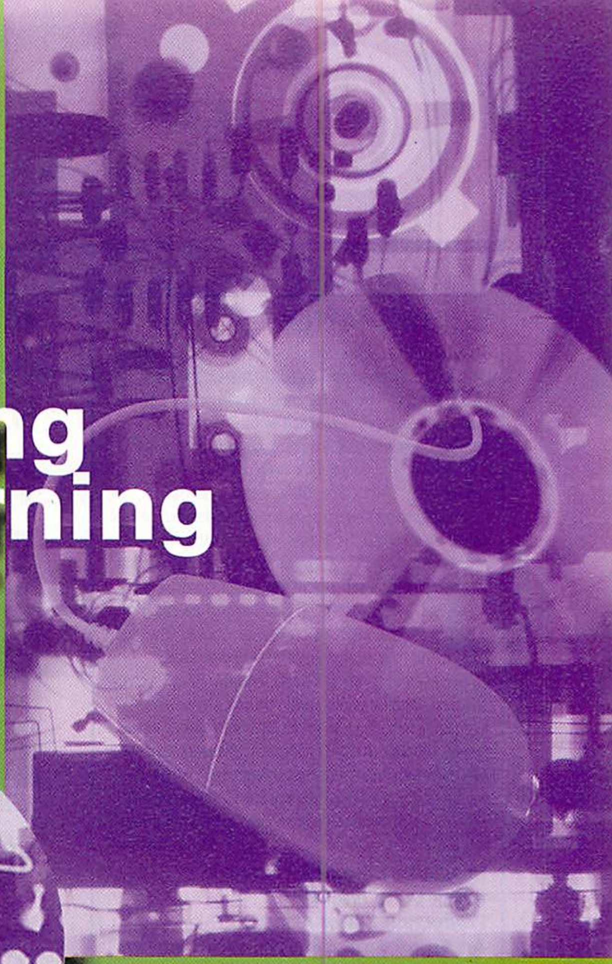
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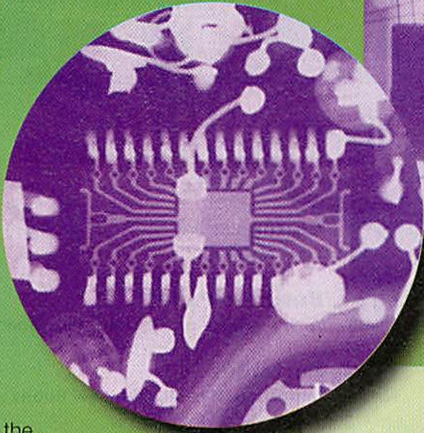
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Editor's letter

There has been some question recently on censorship of the Internet, a vexed question in the old media of TV, newspapers and film — but much worse on the new media of the Internet. Why is it worse? Because the Internet is international, inherently uncontrollable, you can't control who puts things there and you can't control who reads it. The Internet Service Providers have agreed to censor newsgroups and web sites, but while it has to be admitted that there is much that by my standards is deplorable, my standards are not the same as yours and who's to say who's right?

Besides, these good-intentioned efforts are cosmetic, meaningless and probably counter-productive. The worst parts of the Internet (by reasonable and generally agreed standards) are not freely available, they involve private mailing lists and bulletin boards. Censorship efforts have no effect on these. Efforts to censor newsgroups will push the distributors of unpleasantness onto other, uncensored, newsgroups. And finally, where do we draw the line? What happens if your personal interests or politics become objectionable to those in power?

Steve Turnbull

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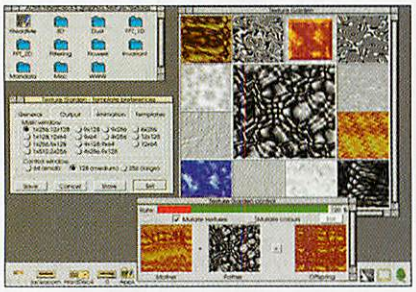
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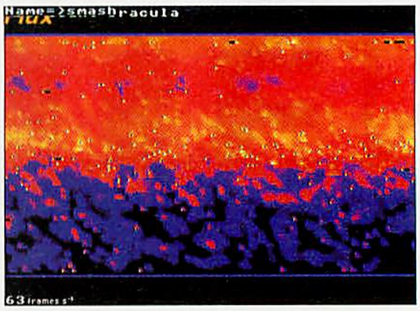
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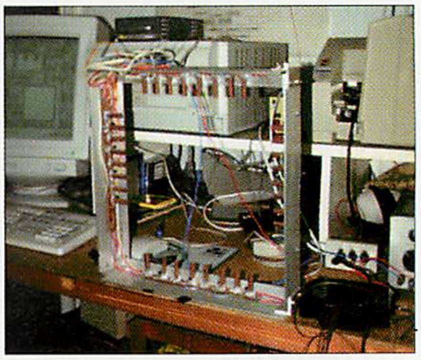
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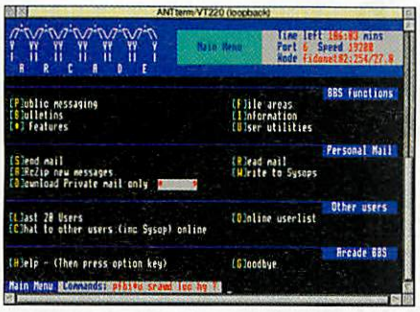


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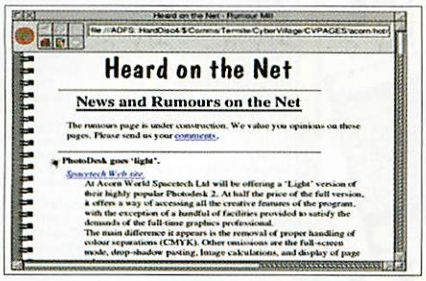
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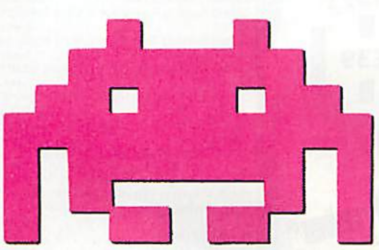
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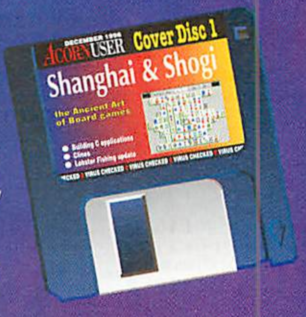
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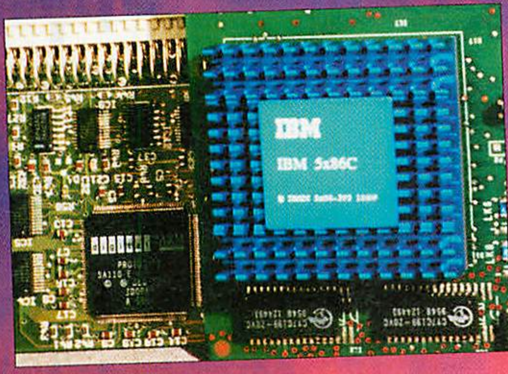




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Play Shogi, a Japanese board game and Shanghai, a tile matching game. There's also the winner of the AU Interactive Fiction competition – BSE plus NewsFind from the AU PD scheme, a demo for the PCA protocol, code for writing your own arcade game, all the regulars and lots more

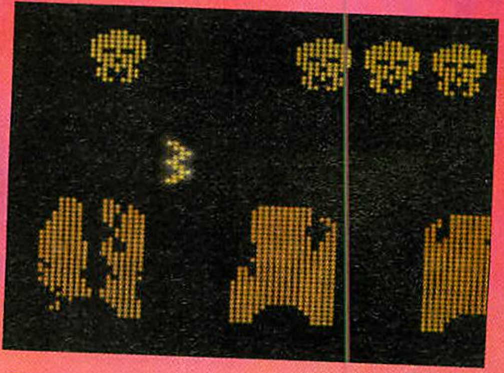


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Mike Cook runs through the do's and don'ts of installing the StrongARM

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Ever fancied writing your own arcade game? Matthew Bloch begins a brand new series to show you how



Next month in Acorn User

Continuing the series creating arcade games for Acorn machines, plus a software compatibility guide for the StrongARM. Our new expanded *INFO continues with another six pages of great software plus all the other regulars.

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Risc PC 1 - 2 Mb VRAM Upgrade	Atomwide	£111.63	£95
Risc PC 2 Mb VRAM	Acorn	£229.13	£195
Risc PC Case Upgrade	Acorn	116.33	£99
Risc PC Sound Card	Acorn	£68.15	£58
Risc PC x86 Card 5x86	Acorn	467.65	£398
Risc PC x86 Card DX2-66	Acorn	£291.40	£248
Risc PC x86 Card DX4-100	Acorn	£350.15	£298
SCSI II Interface for Risc PC	Cumana	£193.88	£165
SIMM 4 Mb 32 bit		41.13	£35
SIMM 8 Mb 32 bit		57.58	£49
SIMM 16 Mb 32 bit		104.58	£89
SIMM 32 Mb 32 bit		199.75	£170
StrongARM Processor upgrade	Acorn	291.40	£248

Acorn portables

A-Link for Pocket Book	Acorn	59.93	£51
Flash Disc 512K for Pocket Book	Acorn	£92.83	£79
Flash Disc 1 Mb for Pocket Book	Acorn	£119.85	£102
Mains Adaptor for Pocket Book	Acorn	£18.80	£16
Parallel Link for Pocket Book	Acorn	£32.90	£28
Pocket Book II 256K	Acorn	£238.53	£203
Pocket Book II 1MB	Acorn	316.08	£269

Other hardware

A305/310/440 RISC OS 3 Carrier Board	IFEL	£22.33	£19
A7000 4M HD540	Acorn	1056.33	£899
A7000 4M HD540 4x CD	Acorn	1173.83	£999
Auto-Scan 1438 Monitor (14") AKF 50 alternative	Microvitec	£299.63	£255
Auto-Scan 1450 Monitor (14") AKF 60 alternative	Microvitec	£229.13	£195
Backplane, 4-slot 4-layer with fan	IFEL	£64.63	£55
ColorMobile Direct Scanner for Windows	Primax	£175.08	£149
ColorMobile Office Scanner for Windows	Primax	£233.83	£199
DeskTV Entry level	Yellowstone	£192.70	£164
DeskTV Standard (with Tuner)	Yellowstone	£232.65	£198
DMI 30	Audio	£106.93	£91
DMI 50 - S	Audio	£192.70	£164
Ergo Keyboard	Castle	£115.15	£98
Ethernet Interface, A400 10base2+T Access+	Atomwide	£116.33	£99
Fan Kit for A300 / A400 Series	ICS	£17.63	£15
GamesPad Dual	GamesW	£35.25	£30
GamesPad Pro Dual	GamesW	£39.95	£34
GT-5000 A4 Colour Flatbed Scanner (parallel port)	Epson	£410.08	£349
iTV	Irlam	£197.40	£168
Lambda16	Irlam	£115.15	£98
Midi Max	CC	£79.90	£68
Midi Port Standard Podule for A5000, A7000, Risc PC	Acorn	63.45	£54
Movie Magic	CC	£232.65	£198
Mozart Digital Audio	Yellowstone	£69.33	£59
PD Cartridge, 650 Mb Rewritable	Panasonic	£44.65	£38
Power Switch	GamesW	£19.98	£17
PowerWAVE 50XG	Audio	£292.58	£249
Printer Port Sampler	VTI	£57.58	£49
RISC OS 3.1 3 Set Rom Pack	Acorn	£88.13	£75
RISC OS 3.1 10 Set Rom Pack	Acorn	£292.58	£249
RISC OS 3.1 Software Upgrade with documentation	Acorn	£78.73	£67
RISC OS 3.1 Software Upgrade without documentation	Acorn	£45.83	£39
ScanLight 256	CC	£150.40	£128
ScanLight 256 for A3000/3010/3020/A4000	CC	£162.15	£138
ScanLight Video 256 A310/400/5000/Risc PC	CC	£220.90	£188
ScanLight Video 256 A3000/A4000	CC	£220.90	£188
Sound Force 1 Multimedia PC Speaker System	QuickShot	£39.95	£34
Sportster Vi 14.4	US Robotics	£112.80	£96
Sportster Vi 28.8	USR	£179.78	£153
Tele-Card	XOB	177.43	£151
Tele-Card + Teletext-Turbo	XOB	420.65	£358
TV Tuner with Teletext	CC	£173.90	£148
User Port Analogue / MIDI for A3000 Series and A4000)	Acorn	68.15	£58
User Port Analogue / MIDI for A5000, Risc PC	Acorn	98.70	£84
Vision 24 A3000/3010/3020/4000 internal	HCCS	102.23	£87
Vision 24 A5000/400/300/Risc PC	HCCS	102.23	£87
Vision 24 508 line A3000/3010/3020/4000 internal	HCCS	136.30	£116
Vision 24 508 line A5000/400/300/Risc PC	HCCS	136.30	£116
Vision Master Colour Monitor 15"	iiyama	295.00	£295
Vision Master Colour Monitor 17"	iiyama	545.00	£545
Vision Master Colour Monitor 17" Pro	iiyama	645.00	£645
Whisper Fan Quietener (for A300/A400 Series only)	ICS	£17.63	£15
Wizzo5 for A5000	ICS	£45.83	£39

Memory

A305/310/440 1 - 4 Mb	IFEL	£138.65	£118
A3000 1 - 2 Mb, Upgradable	IFEL	£61.10	£52
A3000 1 - 4 Mb	IFEL	£111.63	£95
A3010 1 - 2 Mb	IFEL	£44.65	£38
A3010 4 Mb	IFEL	92.83	£79
A3020 / A4000 2 - 4 Mb	IFEL	£86.95	£74
A5000 2 - 4 Mb	IFEL	£76.38	£65

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Printers

BJ-30 Bubble Jet Printer (Black)	Canon	£162.15	£138
BJ-30 Bubble Jet Printer (White)	Canon	£162.15	£138
BJC-70 Colour Bubble Jet Printer (Black)	Canon	£210.33	£179
BJC-70 Colour Bubble Jet Printer (White)	Canon	£210.33	£179
BJC-210 Colour Bubble Jet Printer	Canon	£175.08	**£149**
BJC-610 Colour Bubble Jet Printer	Canon	£421.83	£325
BJC-6xx Ink Cartridge, Black High Capacity	Canon	14.10	£12
BJC-6xx Ink Cartridge, Cyan	Canon	11.75	£10
BJC-6xx Ink Cartridge, Magenta	Canon	11.75	£10
BJC-6xx Ink Cartridge, Yellow	Canon	11.75	£10
BJC-4100 Colour Bubble Jet Printer	Canon	£233.83	**£199**
BJC-4xxx Cartridge, Colour	Canon	£47.00	£40
BJC-4xxx Cartridge, Black	Canon	£30.55	£26
BJC-4xxx Ink Tank, Black	Canon	£10.58	£9
BJC-4xxx Ink Tank, Colour	Canon	£17.63	£15
DeskJet 340	HP	£199.75	£170
DeskJet 500 Series / Deskwriter Ink Cartridge, Black high capacity	HP	£24.68	£21
DeskJet 500 Series Tri-chamber Colour Ink Cartridge	HP	£24.68	£21
DeskJet 660C	HP	£246.75	£210
DeskJet 600 Series Ink Cartridge, Black	HP	24.68	£21
DeskJet 600 Series Ink Cartridge, Colour	HP	25.85	£22
DeskJet 870Cxi	HP	£440.63	£375
EP-L Toner Cartridge for LBP-4	Canon	£69.33	£59
EP-S II Toner Cartridge for LBP-8	Canon	£81.08	£69
LaserJet 5L	HP	393.63	£335
Stylus 500	Epson	£304.33	**£259**
Stylus Colour IIs	Epson	£229.13	£195

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Eidos' Optima re-enters professional video-editing

AS EXCLUSIVELY revealed in last month's *Acorn User*, Eidos is to re-launch itself into the professional non-linear video editing market with the latest version of the *Optima* digital compression and editing suite, which is based entirely on Acorn hardware.

The Eidos *Optima* package will tempt video professionals because of its attractive price: £14,000 for rival Mac and PC-based systems and £5,500 for Optima. Stephen Streater, co-founder of Eidos, told *Acorn User* that *Optima* is ideally placed for producers, directors and editors, for use in colleges and schools and for use in the high-end consumer market.

Optima delivers 25 frames per second with real time compression and playback of up to two video and eight audio channels simultaneously. The quality is approximately VHS, allowing output to tape of the final edited version of the video. A £5,500 + VAT *Optima* system includes a Risc PC700, 17 inch monitor, SCSI 2 card, VideoDesk card, large SCSI hard disc drive, Iomega Jaz drive with 1Gb removable Jaz disc, PAL encoder, 2Mb VRAM and 32Mb extra DRAM, as well as an appropriate support package.

An EDL option, costing £1,000, allows 'autoconform' at an on-line edit suite. This is ideal for professional users, who can produce broadcast quality programmes using *Optima*. The BBC is already using the new *Optima* systems on well known scheduled programmes, like Tomorrow's World.

The CD-ROM toolkit, also for £1,000, allows video edited on *Optima* to be included on CD-ROMs. The tool-kit includes software for PCs and Macs which will play back *Optima* edited video at full screen, full frame rate directly from CD-ROM.

Eidos was formed in 1990 and soon introduced the original *Optima* editing suite, based on the Archimedes A540 workstation. However, even with 30MHz ARM3 processors, the on-screen video quality was poor and although *Optima* found favour with a good number of editors and producers because of its wide range of features and low cost, cosmetically it looked inferior to other more expensive options and never took off. Meanwhile, Eidos concentrated on developing its video compression technology, which was ideal for computer games.

"The Risc PC is the only computer in the world with an operating system that can be made reliable"

Over the last two years, Eidos has gained control of a major slice of the UK computer games industry, but Streater has returned his attention to Acorn and *Optima* - for good reasons too, as he told *Acorn User*: "The Risc PC is the only computer in the world with an operating system that can be made reliable. Reliability is the single most important issue in the professional market where video tape machines never need rebooting, and is one of the major selling points of using an Acorn system," said Streater.

The arrival of StrongARM was a crucial factor in the re-birth of *Optima*, says Streater: "ARM and Digital have excelled in this CPU. It is ideally placed for embedded applications such as the real time video compression and playback used in *Optima*. Eidos has had StrongARM samples since March, and has used this time both to develop the compression algorithms used in *Optima* and to explore possibilities for future upgrades to the system." A crucial part of the *Optima* system is its VideoDesk digitising hardware, which is sourced from Irlam Instruments.

A cut-down version of the original *Optima* system, called *Eidoscope*, was bundled with Eagle multimedia cards by Computer Concepts a few years back. What are the chances of an updated affordable offering for amateurs now? The problem is that the latest *Optima* system requires a very expensive digitiser, but Streater has promised to investigate the possibility of a reduced-cost *Optima* offering, which will probably be offered to Clan members. There could be more news on this at Acorn World.

Tesco Computers for Schools update

FIVE THOUSAND new computers and over 30,000 items of computer gear were successfully claimed through the 1996 Tesco Computers for Schools scheme in conjunction with Acorn.

On average, every school in the land could have claimed three items from the Computers for Schools catalogue. In fact one in three schools actually claimed computer goods via the scheme - 12,000 schools in all - and £5.7 million worth of goods claimed are currently being delivered nation wide.

Tim Mason, marketing director for Tesco, commented: "Five years on and our customers have continued to demonstrate as strongly as ever their great enthusiasm and confidence in the Tesco Computers for Schools scheme.



Shoppers know that the scheme really does work for schools and have continued to show a tremendous level of support each year." Mason added that plans for a sixth scheme for 1997 were well underway.

Since its inception in 1992, £25.9 million worth of computers and related equipment have been donated to schools through the Tesco scheme in association with Acorn.

This year the scheme was widened, through the creation of Acorn and Apple's joint venture – Xemplar Education Ltd – to include PC and Apple Mac products, in addition to Acorn equipment and software. 26,000 Acorn computers alone have been claimed by schools since the scheme was started.

Clares to debut revised Compo

PART OF A LONG list of new and revised software from the Northwich-based software house, a new version of Clares' graphics layout package, *Composition*, will be released at Acorn World. This latest version of *Compo* features many improvements including support for PCA (Plug-in Compliant Application) and StrongARM. Other new features include on-canvas interactive rotation and the ability to load and render *TopModel* files – including fog effects, automasking of *Draw/ArtWorks/TopModel* files on loading.

All vector data is now retained and transformations are done using vectors to provide better quality. A canvas can be saved as a GIF file, there is a transparency option, improved redraw routines and a new print option. Plus you can crop a canvas to the window. Compo is priced £99.95 inc. VAT and existing users can upgrade for £29.95. A Composition Demo can be downloaded from Clares' web site at http://www.stcoll.ac.uk/clares/

A brand new application from Clares which can be seen at the show is called *Speed!* Clares says the utility will speed up any Acorn machine, except those fitted with StrongARM processors and Risc OS 3.7. Speed! is priced £10.

A new version of *ProArt 24* will also be at the show. This now includes support for PCA and has StrongARM compatibility as well as internal enhancements. The upgrade will cost £10 to registered users. Clares' music applications, *Rhapsody*, did not appear to work on a StrongARM machine and Acorn held out little hope of it working because it was written in compiled Basic. Surprisingly, on receipt of a StrongARM they found the program worked after all.

Clares will also be showing WimpBasic. This is a complete development environment, for those who need to be able to knock up a quick RISC OS WIMP (windowing) application to perform simple tasks. Dave Clare told *Acorn User* that WimpBasic is not designed as a tool for creating large applications – "although I am sure someone will prove us wrong," he added. WimpBasic will be priced £49.95 inc. VAT.

Cumana speeds up Oscar

OSCAR WAS always a handy parallel port CD-ROM drive, usable on either a MkII generation Acorn RISC computer or a PC, however it was hardly the fastest thing on earth with its ordinary double-speed mechanism. Now Cumana has announced a quad-speed version of Oscar, with an improved 200ms seek time and an increased 256K on-board cache and a CD/computer audio mixer.

The drive, metal cased with its own power supply unit built in, is priced £249 + VAT. Oscar is also available with an Anglia Multimedia CD-ROM bundle, containing your selection of four titles from a list of 14 for just an additional £50. Cumana can be contacted at tel: 01483 403121.

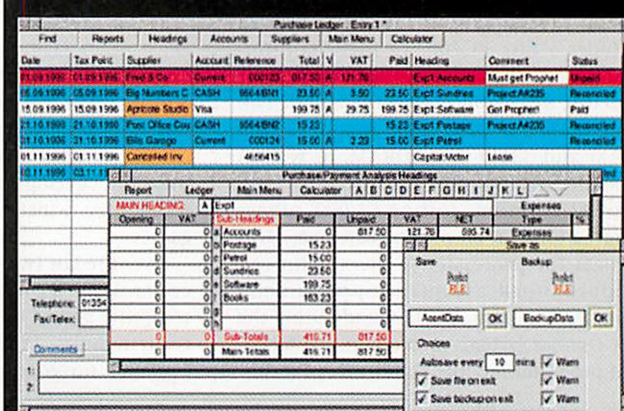


Eesox CD Brick

EESOX HAS announced a CD-ROM accelerator called CD Brick. The idea is that you dump the entire contents of a CD-ROM CD to the CD Brick's local hard disc drive, which then serves the CD-ROM to your network at much higher access speeds than even possible with a fast 8X CD-ROM drive.

There is more cleverness at work than you might think. CD ROMs have various filing systems which need to be emulated on hard disc and Eesox has developed software to do just that. Eesox will make CD Bricks available with various size hard disks so that more than one CD-ROM can be cached at a time. No data compression is currently used, but that is likely to be added in the future. You will be able to see CD Bricks for the first time at Acorn World.

New prophet for all business



Apricote Software has announced that *Acorn World 96* will be the official launch venue for Prophet 3, described as a major new release of the firm's accounting software for the Acorn platform. A central philosophy at Apricote has been to develop a user interface which enables an average set of accounts to be produced via the smallest possible number of keystrokes and mouse clicks.

Prophet 3 easily out-guns popular PC packages, like Quicken QuickBooks and Sage Sterling, according to Prophet author, Quentin Pain. "Productivity is at the heart of Prophet 3, and that is why everything can be done using the keyboard. Users don't have to waste time reaching for the mouse if they don't want to. What is more, data entry is kept to a minimum by allowing users to selectively repeat items from previous entries through a single keypress as well from the use of context-sensitive menus," explains Pain.

Major new features in Prophet 3 include: New, tidier interface (including user adjustable full size ledgers), Auto-retrieve (click on any ledger field to display related documents), full export/import including TSV, CSV and text, wysiwyg document design (including !Draw files), electronic document sending, and auto-tone dialling from customer/supplier databases. All StrongARM aware. Apricote Studios, tel/fax: 01354 680432, e-mail: apricote@enterprise.net

Ovation Pro

(The Professional Desktop Publisher)

Ovation Pro combines fast responsive word processing with state-of-the-art page layout features to deliver the ultimate desktop publishing system. Packed with a staggering range of professional features—many available on the Acorn platform for the first time—Ovation Pro opens up a whole new world of document design. At last you can flow text inside and outside irregular frames or rotate them to any angle—in both cases the text remaining fully editable. Even with such vast range of features Ovation Pro is still easy to use, thanks to a superb user interface that makes the software easy to learn and instinctive to use.

(Superb Facilities Include:)

- Definable Button Bar
- Multi-step Undo and Redo
- Named colour system
- Definable width Pasteboard
- Frames with skew and rounded corners
- Straight and curved line drawing
- Easy-to-use active master pages
- Reads Ovation, RTF, DDF, Artworks
- Irregular frames with Bézier curves
- Drag & Drop for text and objects
- Definable colour charts
- Justification and letter spacing
- Vertical justification
- Autoflow around irregular graphics
- Context sensitive info palette
- Macro handling and script language
- Rotated text frames with editable text
- Drag and drop between documents
- Automatic drop caps
- Multi-column frames
- Frame borders and drop shadows
- Show invisibles
- !Chars and single-shift font change
- Customisable with saveable changes

(Free Update)

A free update will be sent to all registered users, offering more advanced features such as full-colour and spot colour separations, image processing, auto paragraph numbering and 'local OPI' for handling large graphics bigger than the memory size.

(The Extendable DTP System)

Ovation Pro has advanced expansion capabilities using extension modules called Applets. These allow new features to be added without the need to upgrade the main application. Simple extensions may also be written using the integrated script language. A range of extension applets and scripts are planned for the future.

(The Ovation Pro Package)

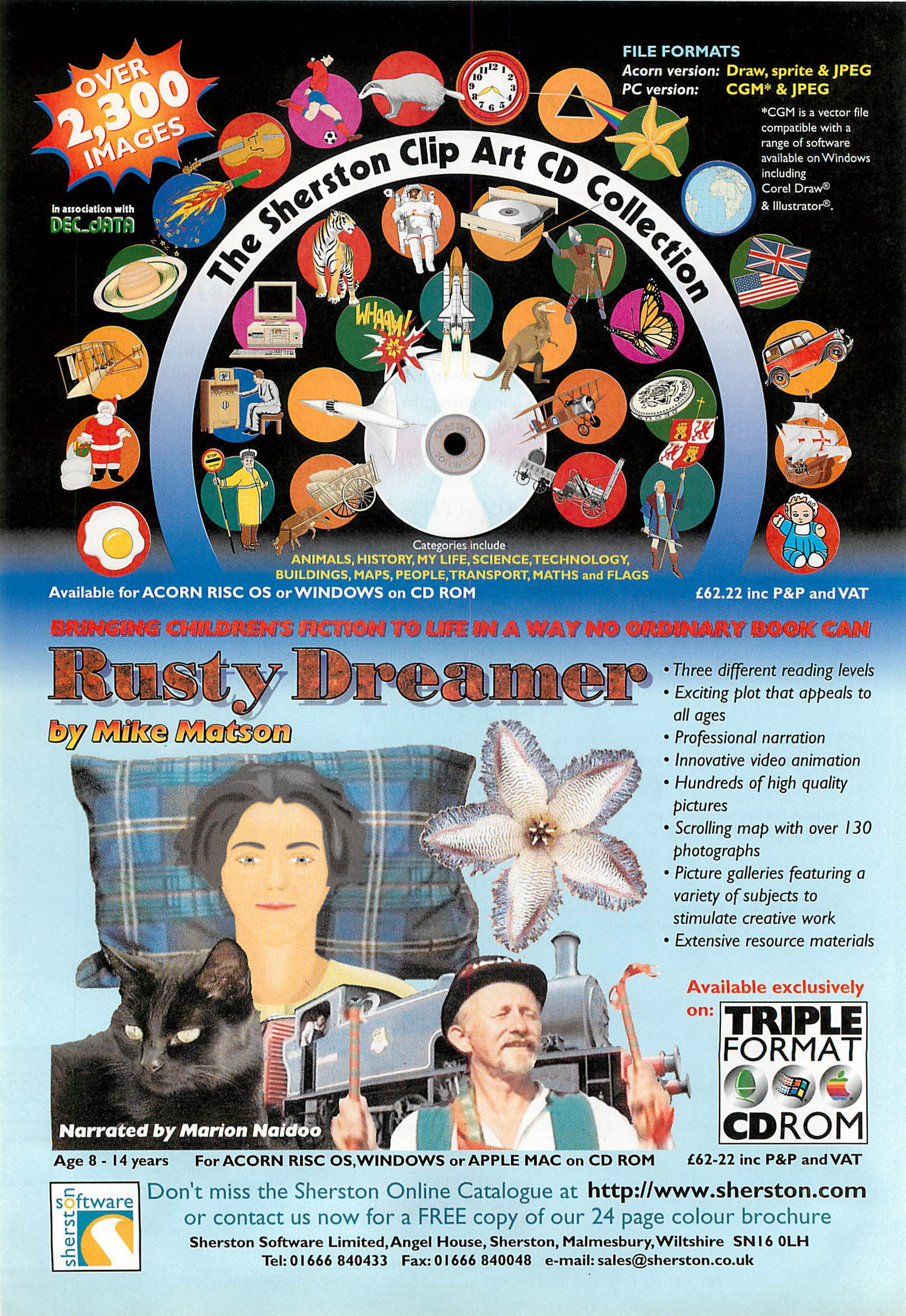
Ovation Pro is supplied with a 300-page reference manual, separate tutorial, reference card, Bubble Help, Desktop Thesaurus, 50 outlines fonts (from EFF, Acorn and Beebug) and a sample selection of clipart from DEC_dATA.
Full colour brochure available on request.

(Ovation Pro *costs* £193.88)

Upgrade from Ovation (bought before 27/10/95) £92.83
Upgrade from Ovation or other DTP* £116.33
*includes impression, EasiWriter, PenDown+ and Advance
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To upgrade you should return your original disc with payment (discs will be returned).
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New releases from iSV

iSV HAS A number of Acorn World releases in the pipeline. Firstly, there is a completely new Font Pack containing over 300 RISC OS 3 fonts, all with kerning pairs. The new fonts are hinted with iSV's new NDT (No Dropout Technology) hinting system. iSV claims NDT format fonts cannot suffer from dropout at any size and offer improved printed and on-screen appearance.

The latest version of *DrawWorks (2.3)* has arrived. iSV reports the new version includes a faster redraw of new toolbars as well as extra tools including a NEW Precision tool. *DrawWorks* is priced £21.50, and registered user upgrades will cost just a fiver.

Calling all teachers, iSV's next new product is *Report Generator*, designed for producing National Curriculum style school reports quickly and easily. The package includes hundreds of standard phrases which can be inserted into any text. *Report Generator* also alters all phrases to take account of the name and sex of the particular pupil. Pupil subjects covered include History, Maths, English and Science.

Finally from iSV there is a classroom security product called *ClassDesks*. This is a protected desktop system for schools. Pupils are restricted to loading and saving the files and applications allowed by a teacher. ClassDesks protects hard discs so only allowable areas can be accessed.

ClassDesks also prevent unauthorised reconfiguration of the computer. There are also other uses, with *ClassDesks* you can arrange for one application to "chain" another. For example, loading !Draw can cause the Printer Manager to be loaded automatically. iSV can be contacted on e-mail at: atimbrell@aol.com

Zipping along

IT'S LIKELY you will be able to see more than just the Argo Interactive PLC prospectuses on the Argo stand during Acorn World. Don't be surprised to see Iomega Zip parallel port drives stacked high as well but that's all we can say at present because a certain company with an Oak nut logo hadn't yet approved the press release.



Spacetech StrongARM boost

SPACETECH, which will show *Photodesk v1*, *Photodesk 2* and *Photodesk Light* at Acorn World, has announced that these and other Photodesk titles are now run under StrongARM and show varying degrees of advantage using a StrongARM. All Photodesk applications take full advantage of StrongARM and RISC OS 3.7, however there is further work to be done. For example, Spacetech reports that !Orrery is extremely fast on a StrongARM machine, but it is not yet fully RISC OS 3.7 compliant.

Weather Desk animations are now much smoother, especially with cross-fade, and the weather satellite hardware is confirmed as being StrongARM compatible. The *WeatherDesk* software is fine in composite and 256 colour modes, but there is some problem with the 16 and 24-bit colour modes. Kepler, the Earth satellite orbital prediction application, is fully StrongARM compliant.



PDSview, PDSmovie, and PDSmap, designed for image processing in True, False and Pseudo colour on large binary data arrays, like satellite and spacecraft remotely sensed data, do run under StrongARM. However, they exhibit similar problems, at present, to WeatherDesk with non-256 colour modes.

Spacetech reports that Fargo Primera and FotoFUN! Dye-sublimation printers work with StrongARM, however, it is necessary to use old printer drivers for the time being.

TopModel, the 3D modelling package Spacetech distributes on the behalf of Sincronia Multimediali of Italy, still needed a fair bit of work to be updated to full StrongARM compliance. Spacetech was confident an updated version of its Gordian installation program would be ready at Acorn World. Spacetech, tel: (01305) 822753, fax: (01305) 860483, e-mail: chris@spacetec.demon.co.uk

Acorn results

First half year figures for 1996 from Acorn indicate that the restructuring over the last year is beginning to reap results. Turnover fell from £19 million to £16.5 million, explained through the separation of the schools business into Xemplar Education Ltd, in partnership with Apple. Operating loss for the group, before exceptional items, was reduced dramatically from £5 million to £1.6 million.

After exceptional items (mostly bad debts) overall operating loss was reduced from £7.6 million to £3.3 million. Good news is that Acorn sold more Risc PCs this year than in the same period last year and there are high hopes for both the new Acorn Network Computing division and a boost from StrongARM, which has started to ship.

Acorn adopts Bitstream

Acorn has announced it is to support Bitstream's TrueDoc Font imaging technology. Primarily adopted for use on set top box and network computer (NC) products, the technology could be ported to Acorn desktop computers as well. The Bitstream technology is well established as a means of compressing and transporting formatted text across networks.

More Impact at Circle

Circle Software, best known for its *Impact* database package, will be releasing two new variants to the package at Acorn World, plus an enhanced version of the existing *Impact2* product. *Impact Junior* will be a simpler (non-relational) database which is less powerful but easier to use and cheaper. *Impact Professional* will feature new field types and programmable action buttons.

ARM Club date

The ARM Club is holding an open day at the National Motorcycle Museum, near Solihull, on Saturday 7th December. Up to 35 stands will be at the open day - if you are interested in attending the show, as an exhibitor or a visitor, contact The ARM Club's Ralph Sillett on tel: (01785) 714535, or pop along to their stand at Acorn World.

ART updates German RISC OS

ACORN MAY have made a strategic withdrawal from Germany, but enthusiastic users there have not been abandoned entirely. ART announced that it is making available, via the World Wide Web, an abridged hard disc distribution image which will enable users to view almost all the text in the standard RISC OS desktop and applications in German. The RISC OS update is officially classified as a beta-release.

The release has had Replay movies, JPEG images and tutorials, which are usually pre-loaded on a Risc PC hard disc, removed to reduce the download file from 40Mb to a more manageable 5Mb. ART explains that the release is in beta form since Access+ and a small number of other message sets have yet to be translated. You can use your Web browser or FTP client to download the Spark archive file from ftp.acorn.co.uk at ftp.acorn.co.uk:/pub /riscos/releases/deutsch37beta



Dry colour printing from ALPS

ALPS HAS launched an interesting new colour printer, the MD2010. Based on the Citizen Printiva, this eschews ink-jet technology for a thermal technology called using MicroDry colour ink/toner. A patented 600 dpi thermal print head transfers dry ink particles from a specially impregnated polymer ribbon. The printer contains four ribbon cartridges (three primary colours plus black) and the head mechanism chooses the correct ribbon cartridge as required.



Uniquely, metallic gold, silver, blue and red 'colours' are available as options. The dry technology means no paper warping or smearing and a straight-through paper path means relatively stiff media, like cardboard, can be printed easily. ALPS and Citizen claim their technology has claimed ten per cent of the Japanese colour printer market in just one year. ALPS printers are distributed by Rotec in the UK, tel: (01604) 402012.

Acorn show in Scotland

THERE'S A NEW Acorn show taking place on Sunday 8th December at the Stakis Hotel in East Kilbride. Exhibition times are from 10am until 6pm and entry will be free to all.

Exhibitors will include ART, Clares, Quantum – who run the CyberVillage – and the local Xemplar Agency. Further bookings are being taken daily and the organisers are hoping to have 20+ exhibitors by the time of the show.

For further information contact Robert Todd, Todd Education Computer Services, tel: 0141-644 4952, e-mail: rtodd@enterprise.net, WWW: http://homepages.enterprise.net/rtodd /show.html

Correction

IN OUR HASTE to beat the deadline for our last issue, we inadvertently reported that a new company called VTI Holdings PLC had been floated on the stock market. In fact the correct company name is Argo Interactive Group PLC, which unites the Argonet, VTI and Eclipse brand names.

Argo Interactive Group PLC is the first UK company to launch a bona fide share offer on the Internet, although at present it is not listed on the stock market. We're sorry for any confusion which might have been caused.

For further information or a prospectus, Argo Interactive PLC can be contacted at tel: (01243) 788668, fax: (01243) 531196, e-mail: enquiries@argonet.co.uk, Web: http//www.argonet.co.uk

EasyFont upgrade

Fabis is to release an *EasyFont Professional* upgrade at Acorn World, priced £15 for registered users or £59.95 otherwise. You will need to bring your original disc with you to obtain the upgrade at the show.

Fabis will also release *EasyClip* 1.50 at the show, priced £5 for existing users. Both these new releases are StrongARM compatible, however earlier versions are not.

Fabis Computing, tel : (01283) 552761, fax : (01283) 552761, e-mail: info@fabis.demon.co.uk

StrongARMed Forces

ARMed Forces Software has announced all its latest releases are StrongARM compliant. They also report that there is "a very significant improvement" in the performance of WinRisc, their virtual memory system. RSDFS and Full-FS RSDFS work perfectly, but gain little performance improvement because the serial port is the bottleneck, not the CPU.

The ARMed '96 demo works, though the QTM music player it uses doesn't always. Part one is no faster than an ARM710 machine as it is limited by the screen refresh rate of 150Hz. Part two, the full section is much faster, redrawing a frame on every screen refresh. A StrongARM demo is likely to be released at Acorn World.

http://www.afsoft.demon.co.uk/

New user group forms

The inaugural meeting of the Surrey and Sussex Acorn Users' Group (SASAUG) will be held on January 30, 1997. The meeting, scheduled for 8-10pm at The Holbrook Tythe Barn, North Horsham, West Sussex, will hope to achieve its critical mass at the first attempt. Stuart Bell (sabell@argonet.co.uk) is the guy behind SASAUG and he needs at least 16 members to avoid being out of pocket. Anyone interested is warmly welcomed and the first meeting costs just £1 per member.

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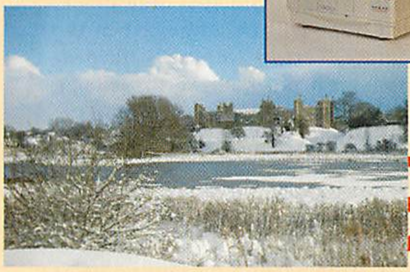
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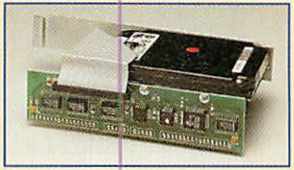
	120Mb ex VAT	120Mb inc delivery & VAT	240Mb ex VAT	240Mb inc delivery & VAT
A3020	£90.00	£117.50	£120.00	£152.75
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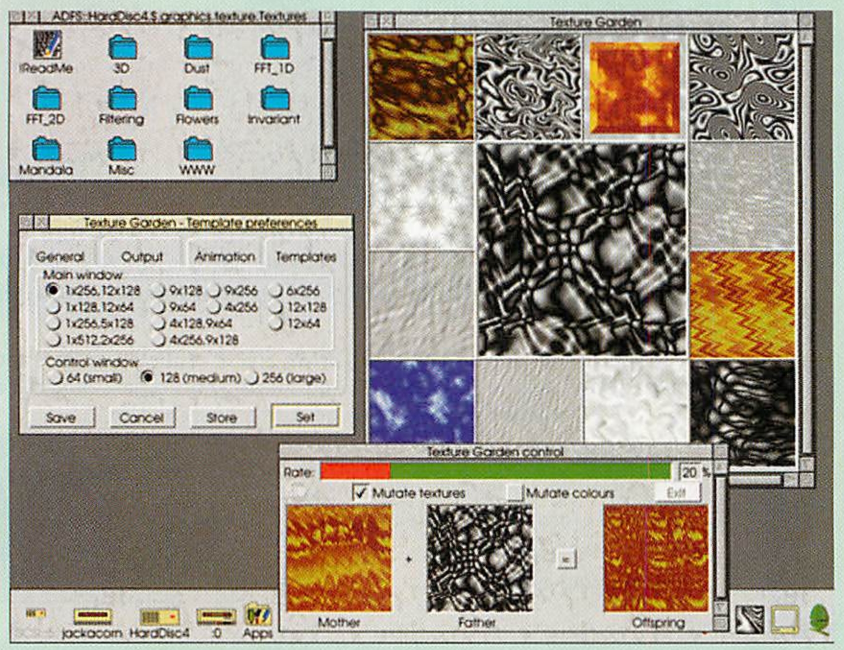
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Cultivate an exotic crop of textures



Texture Garden provides more ways to warp and contort fractal textures than any other explorer. It can even create animations of the textures and all for just one phone call on the Internet

Texture Garden is the new package from Tim Tyler which allows you to grow all those weird and wonderful bitmap textures you previously needed Studio24 or Photodesk 2 to achieve. In fact, its files are compatible with Studio24's but it is not the similarity with the aforementioned graphics packages that makes Texture Garden stand out. It is the difference.

Though only at version 0.40 at time of going to press, it is already proving more than a match for current texture explorers in the number of ways different textures with assorted colour schemes can be grown. There are too many combinations to explain here of how and where you can drag and drop texture files, palettes and bitmaps, but they all help you to generate just the right texture.

The package, downloadable from Tim Tyler's WWW page also comes with dozens of texture files which you can grow from seed, colour, vary, mutate and even cross-fertilise. Some are of the standard 'plasma' variety but others use the program's powerful fractal engine to create snow-flakes, crystal lattices, shells, fluid vortices and, quite appropriately, flowers. I guess this is the closest you can come to getting green fingers on a computer and I'm sure the results are just as rewarding as gardening.

Other nice touches are:

- A 'stop' button. Unlike many packages that take several bashes to work, this immediately halts the sometimes lengthy texture generation process
- An animation function that allows consecutive variations on the texture to be recorded in a sprite file and replayed as an animation
- A very comprehensive options area enabling re-sizing of parent and offspring windows.

My only criticism at this early stage is that the textures cannot be grown to a size larger than 256x256 pixels. Though all the patterns generated are repeating so they can be seamlessly tiled, repeating textures are not as convincing as full page non-repeating fractal and plasma imagery which *Studio24* and *Photodesk* support. Apart from this wee gripe, which I hope will be addressed in the near future, *Texture Garden* is ripening up into a great program, worthy enough to be a desirable companion of any big bitmap graphics package.

Tim Tyler's WWW page from which the *Texture Garden* can be downloaded is at http://www.varuna.demon .co.uk.tmc and Tim Tyler can be contacted on e-mail at tim@varuna.demon.co.uk. I strongly recommend getting hold of this package soon and make as many requests and suggestions while it is still being developed.

More DTP news from TJ Repro

Not satisfied with providing the most expert and fastest imagesetting service for anything up to A3, TJ Repro have announced the arrival of an oversize A2 imagesetter in-house.

Powered by a 180MHz PowerMac, the ECRM imagesetter can produce film for making offset printing plates up to 45cm wide.

All Postscript is written on the Acorn which has marked speed advantages over even the most powerful Macintosh software.

Of great interest to the technically minded is the provision of support for Stochastic Screening. Imagesetting and offset printing traditionally use very fine halftone screen and high dot resolutions for achieving smooth colour gradations and sharpness of image.

Stochastic screening uses only the highest resolution of dot but does away with conventional halftoning and uses an advanced kind of diffusion dithering instead.

This enables imagery to be printed at the equivalent of 450 line per inch whereas the pictures in this magazine are just 150lpi. The potential for quality increase in professional colour printing is similar to the difference between a dot-matrix and a 720dpi inkjet.

All eyes on VRML

Aspex has lauched a stable beta version of the *DaVinci* engined VRML browser for the Acorn called *VRML Eyes*. Like the full 3D editor from which it was spawned, it is fast, very easy to use and important for a viewer, quick to load up and to load in files.

Aspex Tel: (01822) 611060

Contact

You can contact the graphics and DTP page by writing to me, Jack Kreindler at *Acorn User*, Media House, Adlington Park, Macclesfield SK10 4NP, or by email to augrafix@idg.co.uk.

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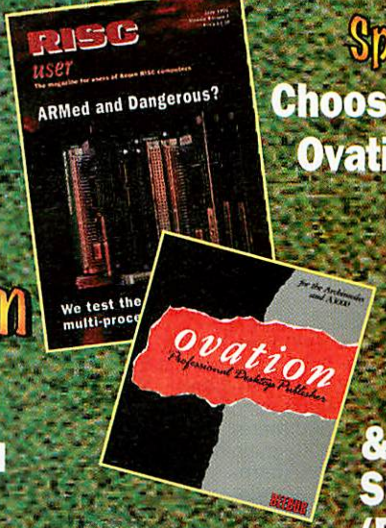
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Above drives are compatible with RiscPC/A7000 only.

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PCW Verdict - 'It's extremely quick, and a bargain.'	
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For SCSI interfaces refer to Hard Disc section adjacent.

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Connor 1.27Gb	£225b

For A3000/A3010 hard discs see Hard Card section below.

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Hard Disc Interfaces/Accessories

IDE interface	£65b	50/50C SCSI Cble	£10a
Morley Uncached	£113b	25D-50C SCSI Cbl	£10a
Morley Cached	£165b	SCSI2-50C Cable	£24a
Cumana SCSI II	£195b	SCSI2-25D cable	£20a
PowerTec SCSI2	£195b	50IDC 4-way SCSI	£15a
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6	Road Signs	16	Safety Signs
7	Sports Equipment	17	Xmas1
8	Sports Figures	18	Xmas2
9	Dinosaurs	19	Xmas3
10	Symbols	20	Xmas4

RiscPC Computers

All Acorn computers include 1yr on-site maintenance. 3yr On-site is available. **Carriage included on computer systems.** For PC Cards see PC Card section below. **Please note that a backplane is not fitted to RiscPC600.**

With 14" Monitor (AKF60)

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RPC600 4MHD540+8xCD	£1375
RPC700 5MHD540	£1525
RPC700 5MHD540+8xCD	£1625
RPC700 10MHD1Gb	£1750
RPC700 10MHD1Gb+8xCD	£1850

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QuickTile (v1.03) £29a

QuickTile allows you to create posters from ANY RiscOS application, including Impression. Simply enter the size of poster required & select PRINT from the application! QuickTile does the rest, printing each tile with crop marks and tile references. New features include the facility to print inverted crop marks or no crop marks. QuickTile can only be used with the RiscOS printer Driver or TurboDrivers.

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16Mb	£118	32Mb	£220

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1Mb	£90	2Mb	£120
1-2Mb u/g (exchange)			£80

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BJ-210 (BC-05)	£28	BJ-300 (BJI-642)	£16
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BJI-201C/M/Y	£8 ea.	BC-20 Fast Black	£28
BJC-800		**HP DeskJets**	
BJI-643 Black	£18	Mono	£23
BJI-643C/M/Y	£23 ea.	Colour	£25

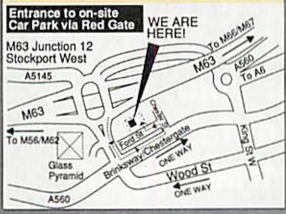
Epson Stylus Colour	Black £16/Colour £26
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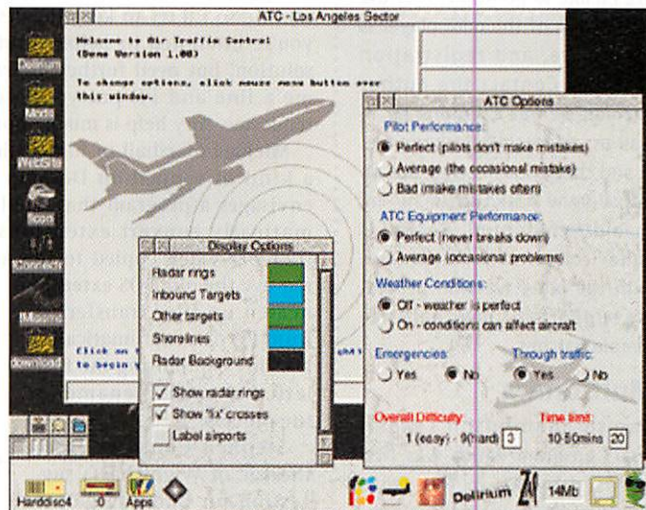
***ATC* PUTS YOU IN CONTROL** of the radar and radio of an air traffic controller. Presented with a radar view of the area surrounding the Los Angeles LAX airport, your job is to guide the planes in to land, while avoiding collisions and a whole array of other dangers. Author, Mike Smith, has produced another great shareware program.

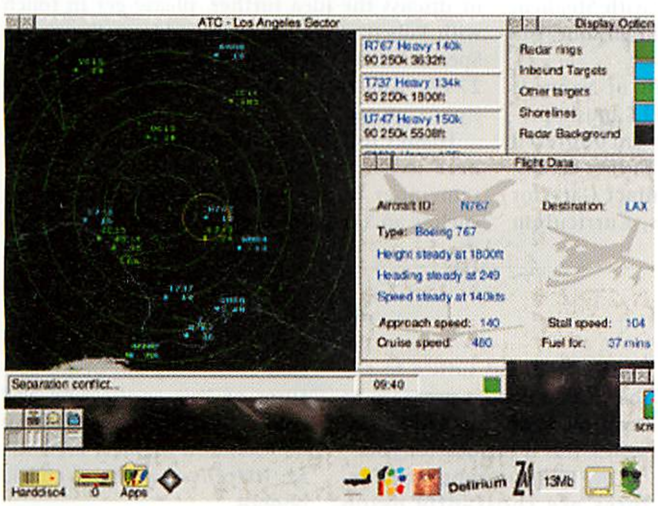
At this stage I'd just like to point out that this is not the Mike Smith of the *Dis-Le* language tutor, but is in fact the Mike Smith who has produced such titles as *WhereUK* (reviewed in the May issue of *Acorn User*). Confusing isn't it? Perhaps to be a successful shareware author, the name Mike Smith is something of a compulsory requirement...

The game is very original in terms of the type of gameplay. The idea is based quite accurately on a real simulation (with one or two compromises used to make it playable) but provides a very interesting game scenario. Starting with a bare radar map, planes appear in the locality, ready to land at your airport.

Using radio commands to the individual aircraft you instruct the pilots which course, height and speed to take. A number of other aircraft also pass through or take off from neighbouring airfields. You must guide your planes around these obstacles, avoiding collisions and getting them down before they run out of fuel.

ATC is demonstrated in a cut-down public domain form, available as Freeware. It's the shareware version that takes things a step further, giving a greater range of options. Your destination airport can be chosen from several alternatives and a selection of further dangers can be simulated. Aircraft can suddenly demand emergency action on losing an engine or getting a fuel leak, requiring the urgent reorganisation of your landing plan.





As with Mike's other software, *ATC* is highly recommended. I only spotted one niggle which caused the program to crash on odd occasions, but I'm sure Mike will have sorted this out by the time you read this.

ATC is a highly unusual game and given the relatively slow pace of some parts – although things can become quite frantic when a large queue of planes develops – I'm not really sure why I liked it that much.

But suffice to say, it is very addictive, and my cheque is in the post for the registration version. A few alterations to add button controls and a time skip option would just complete the game in one or two areas.

The program is available from the APDL library in its demo form, but I would recommend plumping straight for the registered version which is available direct from Mike for £9.99.

Contact: Mike Smith, 19 Tulip Road, Awsworth, Notts, NG16 2RS. Mike also has a catalogue of his large range of great shareware software, which offers large number of educational programs ideal for schools.

Demo news

THE NEXT XPERIENCE DEMO has been released and is apparently well worth the wait. Signum offers a demo of both technical and presentation qualities and this could be *the* release to kick start the demo scene. Full review next issue.

In another promising development from the German scene, the group Icebird have announced the first Acorn-only demo party. Unfortunately organised too late too allow a pre-event announcement, the party should have taken place by the time you read this. I was at first sceptical of an Acorn-only party, but with several impending releases from a multitude of demo groups this could really be the start of a new era for the demo scene. Expect a full report within an issue or two, and check the Stuttgart and Acornet ftp sites in Germany for the party releases.

In the meantime, the demo contributions for the Acorn StrongARM CD have been completed and should be released shortly after this issue of *Acorn User* hits the streets. Key contributions include releases from Arm's Tech and my own group Quantum. In the words of Frederic Elisei, with the Quantum release providing plenty of presentation and the Arm's Tech demo fulfilling the technical side, everyone will be happy. I think a collaboration of some sort would be necessary to keep pace with The Xperience, however.

While I'm still on the subject, Frederic's excellent demo *web* site has changed addresses after the installation of a new server. The site, along with several key updates can now be found at: http://sidonie.imag.fr/elisei.

Re: ReMidi

Following on from the review of *ReMidi* in the August issue of *AU*, I'd like to point out that the full version of the midi player is shareware, and registration costs £5. Contact the author Michael-Dennis Biemans by e-mail at: michaeld@stack.urc.tue.nl and check out his web site at: http://www.stack.urc.tue.nl/~michaeld/remidi.html. *ReMidi* is under constant development, with the latest version providing support for new half-size sample patches.

MultiChars

Gareth Edmondson's *MultiChars* program which was first released by AU in the *Info section two years ago, has undergone some major improvements following suggestions from users. *MultiChars* is broadly similar to the *Chars* application provided by RISC OS in your resources directory, but offers a range of improvements. Characters are available by language, allowing only the necessary chars for the alphabet you are using, to be displayed.

Version 2.11 of the program is now shareware. The registration costs £5 and includes a very professional printed manual. Registered users will receive the latest update soon. My only minor complaint is one or two RISC OS style transgressions and the serious lack of anti-aliasing in the programs icon – it looks rather ugly on your icon bar. Functionality wise, it does the job well. Contact: Software 7, 49 Mackworth Drive, Cimla, Neath, SA11 2QA.

PDtracker

Simon Hatliff has released version 4.53b of his popular *PDtracker* application, which plays a wide variety of music modules using the best players for the job. The new version includes automatic CD scanning and playing, Xenakis support for 8 and 16 track music and a range of other little improvements. *PDtracker* can be found on Simon's web site at: http://www.ed.ac.uk/~simh/pdtracker/

Software requests

PLENTY OF REQUESTS TO get through this month, so I'll try to keep the descriptions brief. If you're interested in helping out with a software solution, but need further information, just drop me a line and I'll put you in contact with the requestee. Any help is much appreciated.

Michael Marshall of Kilmacolm is interested in a kind of souped-up DosMap utility. Michael envisages a program that would not only automatically convert extensions on PC discs to filetypes when copied to the Acorn, but also to remove the old DOS extensions. The idea being to neaten up files transferred from PC discs automatically, possibly capitalising the first letter of each filename in the process.

Stephen Courtney from the Isle of Wight has a suggestion for budding games coders looking for a novel game idea. Stephen's idea is based on the old C64 game *Little Computer Person*, which is basically kind of a "person living at home simulator", rather than your more typical flight simulator.

If you're interested in working with Stephen, drop him a line at: 3 Hollis Drive, Brighstone, Isle of Wight, PO30 4AS.

Gary Hughes from the Republic of Nauru is interested in support for the AMPLE music programming language. I've never encountered AMPLE before and so can offer no further details, but music enthusiasts should contact Gary for more information: Gary Hughes, Curriculum Office, Dept of Education, Republic of Nauru, Central Pacific.

The most important request this month comes from Robert Sterry, the deputy principle of Kurrambee School in Sydney, Australia, which caters for students with moderate and severe intellectual disabilities. He would be grateful for any help with producing simple graphical software in this area. As he explains: "We are looking for simple 'cause and effect' software with no literacy requirement (our kids can't read)."

> "We are looking for for simple 'cause and effect software with absolutely no literacy requirement (our kids can't read)"

Some of this kind of software already exists, but as Robert points out "there's not enough of it and the visuals and sound effects are simply not interesting enough to hold the student's interest for long. It doesn't form a proper learning sequence."

A possible solution would be some kind of very simple authoring software that allows a teacher with no technical knowledge to put together a series of graphics with sound, which are activated by input from the student. If you'd like to help out or discuss the idea further, please get in touch with Robert at the following address: Kurrambee Special School, Werrington Rd, Werrington, NSW 2747, Australia. Or by e-mail to rsterry@pnc.com.au

Thanks for your contributions. As always, I'm here to answer your PD queries, but please remember to use e-mail if at all possible, or enclose an SAE with snail mail enquiries.

VideoBase

Many programmers will recognise the name Paul Hobbs as the author of the excellent *EventShell* software which has been featured before in this column. With *VideoBase*, Paul has come up with yet another killer app. I haven't got enough space to go into too much detail, but suffice to say that if you need a program to keep track of your video cassettes, this is the one for you.

The massive range of features are constantly being improved and added to. The new version 2 of *VideoBase* is shareware, for which registration costs only £8. Demo versions of this application and Paul's *EventShell* package can be found on the new web site at: http://www.angel.co.uk/phobbs.

The old site, mentioned previously in this column, no longer exists.

Recommended PD Libraries

The Datafile, 71 Anson Road, Locking, Weston-Super-Mare BS24 7DQ
Naked PD, 'Fayence', Fulford Road, Stoke-on-Trent, Staffs ST11 9QT
Arch Angel PD, PO Box 41, Exeter EX4 3EN
APDL, 39 Knighton Park Road, Sydenham, London SE26 5RN
Five Star Marketing, 4 Shepherds Walk, Bushey, Hertfordshire WD2 1LZ
Beebware PD, 83 Forrest Road, Huncote, Leicester LE9 3BH
ARM Club PD Library, Freepost ND6573, London N12 0BR
Risc World PD, daniel.hayes@argonet.co.uk

Contacting me

You can contact the PD page by writing to me, Paul Wheatley, at Acorn User, IDG Media, Media House, Adlington Park, Macclesfield, SK10 4NP. Or preferably, by e-mail to aupdpage@idg.co.uk.



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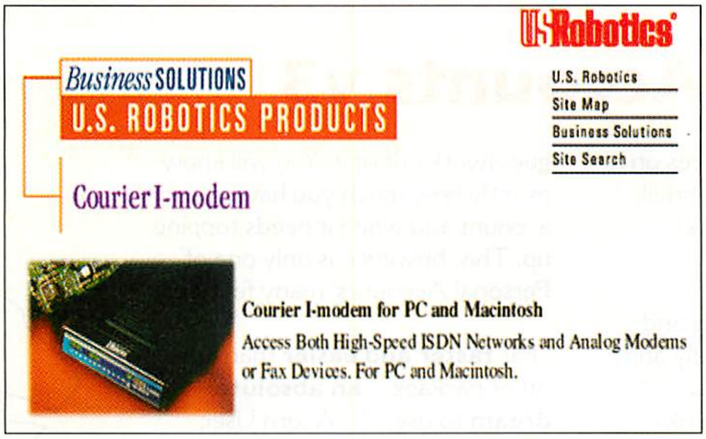
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E&OE

Making modems that go quite a bit faster

JUST WHEN we thought the modem makers had squeezed as much data transfer speed as possible out of the analogue telephone system, some manufacturers are announcing products offering a speed hike from the current maximum of 33,600 bits/sec to an astonishing 56,000 bits/sec.



Rockwell International's website at http://www.rockwell.com explains how this analogue data rate compares favourably with a digital ISDN connection of 64kbits/sec, but relies on part of the link between the new modems being a digital connection to the Internet service provider.

The Rockwell chipset implementing this new technology is to be demonstrated at Comdex in Las Vegas in November, and Zoom Telephonics has announced plans to produce modems using it, according to a report on its website at http://www.zoomtel.com. Meanwhile US Robotics is reported to be working on similar technology. Keep an eye on USR's website at http://www.usr.com.

There's increasing interest in how to connect Acorn machines to the Internet via ISDN services being offered by popular ISPs. ISDN installation charges are still the limiting factor for most people, although the prices of terminal adaptors (TAs) such as the *BT Ignition* ISDN modem are becoming comparable to analogue V34 modems.

A recent posting in comp.sys.acorn.hardware by Nick Craig-Wood describes ISDN for Acorn machines in four steps which has whetted appetites. Read it on *DejaNews* at http://www.dejanews.co.uk/. Step 1 is to get an ISDN2 line installed, which can cost £199 + VAT and £130 + VAT per quarter rental, with £90 per year call allowance (see http://www.bt.com/newsroom/document/nr9663.htm) but gives you two 64kb/s lines.

Step 2 is to buy a TA from about £299 + VAT, with V120, a 115,200bps serial port and one or two analogue ports for telephones, answerphones and so on.

Step 3 is to set up your software and if you have the *Ant Internet Suite*, it already has settings as supplied by Nick himself for ISDN with the *BT Ignition*, so a couple of clicks does it.

PD packages are more tricky to set up, but a Shareware PPP driver (Nick's recommended protocol for ISDN to Demon) by Sergio Monesi can be FTP'd from ftp.dsse.ecs.soton.ac.uk/pub/Acorn/freenet/s.monesi/.

Another TA protocol called V120 may allow KA9Q users to participate too.

Step 4 is to enjoy an ISDN connection over twice as fast as is possible with a modem, and at least twice as expensive.

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HOW DO you fancy the online world knowing you as steve@ThePentagon.com, ian@CyberJunkie.com or sevvy@The18thHole.com? There's a certain snobbishness among net users when it comes to e-mail addresses, and only if you can afford your own company domain name registration do you have the ultimate cool address.

The rest of us put up with having our e-mail addresses contain at least our service provider name and sometimes random letters or numbers instead of our own names. But NetForward.com run by Myriad Corporation, an Internet service provider in Texas USA, can change all that.

It's a free service that provides permanent and portable e-mail and Web page forwarding. In practice, you choose a 'virtual' e-mail address at a domain from a selection registered by NetForward.com, and quote this new address in all your correspondence. They forward all incoming e-mail to your current e-mail address, or any other you specify. If you change jobs, service provider or 'real' address you just update your forward mail address at NetForward.com. They also offer free Web page forwarding to give you a permanent home page address although the company will accept voluntary contributions of up to $10 per year.

To apply for an address go to http://www.netforward.com/ and check the selection of domain names. Remember to turn off topics of interest in the application form if you don't want junk e-mail. I thought about applying for david@DeathsDoor.com but I'm superstitious.

Cybervillage shop

The URL of this month points to the Acorn Cybervillage WWW shopping area for Acorn-related products run by Liquid Silicon in Kirkcaldy, Fife, Scotland. Liquid Silicon is an Acorn authorised dealership supplying over 2000 items including Risc PCs, cables, printers, memory, software, drives and modems.

The Cybervillage Acorn Web shop is open 24 hours accepting orders online with credit or debit card, or you can send your order by mail to FREEPOST EH2725, Kirkcaldy, Fife, KY2 5BR Scotland, tel: (01592) 592265. Their catalogue pages start at this URL: http://www.cybervillage.co.uk/acorn/liquid/index.htm

Digital Databurst

This is not a BBS fault report but refers to the name of a new disc magazine called *Databurst*, for Acorn users to download and read from the Digital Databank BBS. The PD group Quantum has allowed use of its magazine software to produce Databurst, which has the added dimension of music and graphics to entertain readers. A demo issue is now available on the BBS.

Digital Databank BBS
(01707) 329306/323531

On-Line Dictionary

FOLDOC is a searchable WWW dictionary where you will find the explanation of all those acronyms like SLIP, PPP and POP3, as well as anything else to do with computing. The editor, Denis Howe, says the dictionary now contains over 10,000 definitions totalling 3.6Mb. Yes, it does have an accurate entry for ARM.

FOLDOC
http://wombat.doc.ic.ac.uk/

Contacting me

Contact me by writing to David Dade, Acorn User, IDG Media, Media House, Adlington Park, Macclesfield, SK10 4NP, or by e-mail to: DaviD@arcade.demon.co.uk, or mail #2 on Arcade BBS 0181-654 2212.

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Welcome back old friend

IT IS DEBATABLE which piece of software has revolutionised businesses most since the advent of the computer. Good cases can be made for word processors, DTP packages and databases. Perhaps the most natural case can be made for the spreadsheet which is simple, powerful and elegant with its rows and columns allowing easy handling of figures.

By the time you read this I hope many of you will have had the opportunity to acquaint or re-acquaint yourselves with an old favourite in a new guise. I refer to *PipeDream* which was released at Acorn World. As I write this (mid-Sept) I haven't seen the new version, so cannot review it but I hope to encourage business users to look again at it.

The re-release, called *PipeDream 4.5,* has been revamped to bring it more closely into line with current RISC OS standards and to take some advantage of newer machines. It is interesting that, according to Stuart Swales of Colton Software, they have "tried to put the software to bed so many times that we gave up". In other words pressure from the vast user base has eventually led to the re-vamp.

It is good to see user requests eventually leading in this direction – there are few things worse than a software house deciding to discontinue support for a package. As *PipeDream 4.5* is officially an upgrade and not a new version this will allow current users a cheaper upgrade path while still allowing Colton to make a profit.

Descriptions of *PipeDream* always tend to be prefaced with the word "quirky" but that said, it was always very flexible and powerful. It was either a spreadsheet you could word process with or vice versa and also had database and graph functions in later versions. It is one of the few software packages still around that can trace its lineage back to the BBC B via its predecessor *View Professional.*

What really distinguished *PipeDream* was the dedicated user base it developed. Certainly no other Acorn package attracted such loyal, vociferous users. It has its own support group – the Pipeline User Group – led by Gerald Fitton of Abacus Training. This has had rising numbers of subscribers in recent months owing to special offers available from *Acorn User* – sadly all offer copies are now gone. Pipeline offers quarterly support discs and unlimited postal support for subscribers at only £18 a year in the UK/EEC and £20 in the rest of the world.

What really distinguished PipeDream was the dedicated user base it developed. No other Acorn package attracted such loyal, vociferous users

Gerald has been closely involved in the testing of the latest version and hopes to produce an on-line manual for the upgrade, which should help keep costs down although this is unlikely to appear before the new year. It is interesting that influencing the final decision on proceeding with a new version of *Pipedream,* was the high costs of having new boxes and manuals printed. I wonder how much other good software is "put to bed" finally for this reason?

PipeDream 4 was supposed to be replaced by *FireWorkz* but this was never as popular despite being more modern. One of the particular strengths of *PipeDream 4* was its ability to produce graphs. Many times when I have had to produce graphs for presentations I have gone back to *PipeDream* simply because nothing else matches the flexibility.

Gerald reports only slight problems with the new version mainly in the area of backward compatibility and Colton is aware of these. Perhaps the best news is that Colton has sent the new version to Acorn for compatibility tests with StrongARM and it proved remarkably stable and obviously much faster. StrongARM appears to be proving a good reason for mid-life re-vamping of much of our best software.

I suppose it seems churlish to welcome a new package with the start of the next wish list but if *PipeDream 5* appears one might want OLE/DDE better import/export of other files, and an intelligent spell checker capable of guessing at words mis-spelled.

I have no details on price yet but watch the adverts and upgrade at the earliest opportunity.

Contact: Colton Software, tel: (01223) 311881, Abacus Training, tel: (01793) 723347.

Sunny times

KEEP THE Acorns in Business details coming in and I'll try to feature them in future pages. If there were a prize for the most unusual use I think it would have to go to Modern Sunclocks in Scotland. They still use a BBC B for producing invoices although they also have an A3010.

Why unusual? This company produces human sundials – they prefer the term sunclocks. The mind boggles so let Douglas Hunt explain in his own words: "We deal in sunclocks – which use a person's own shadow to tell the correct time. They are all at ground level, and unlike conventional sundials, they can't be easily stolen or vandalised. If set into grass, you could run your lawnmower right over them. They can be made from almost any material (wood/concrete /flowers, etc), or just painted on the ground. They even cope automatically with the twice-yearly GMT to/from British Summer Time change. It is a long story – but basically it started as a hobby in 1986, and is now an international mail-order business.

"We provide personalised sets of computer-generated plans and layout Instructions for our novel sunclocks. All measurements etc, are unique to each customer – it all depends on latitude and longitude, and how big they want the layout to be. They typically need a level area, 20 to 25 feet in diameter.

"Needless to say, these sets of plans are produced on Acorn hardware with all software programs written in BBC BASIC. In fact, this was a main consideration when we wanted to upgrade our hardware from the original BBC Micro, to a 32-bit machine."

Interested? Contact Douglas on e-mail 100014.2111@compuserve.com or tel/fax on (01294) 552250

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Contact

You can contact me, Mike Tomkinson, by post at the usual *Acorn User* address or by dropping me an e-mail at: *aubizniz@idg.co.uk*

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E.&.O.E 10-10-96

Importing RTFs

PocketFS has long been able to export Pocket Book Write files in Rich Text Format (RTF). RTF files are very common on PCs but recently seem to be coming even more so on the Acorn platform. In this piece I'm going to look at the RTF importing capabilities of three main RISC OS packages.


This is the heading in Bold Times 24pt and is centered.

The file I am using has been generated on a Pocket Book II (this is, I think, what readers of this column are interested in importing) and contains styles, effects, different alignments and double spacing. The print-out shows what the final document should look like when printed from the Pocket Book.

Ovation Pro

Ovation Pro is the newest package under review and uses a filter system to enable it to import RTF files. The importer is only in its first version but performs reasonably well and handled all the effects and styles thrown at it. The package managed to reproduce the original document very accurately and copied across all the styles from the Pocket Book successfully.

It did have a problem with some files – although not the one under test – where it missed out the first word of some paragraphs. However, Beebug is investigating this and hopes to have a new version of the loader included in one of the free updates.

Impression Publisher

I tested Impression Publisher both with the standard RTF loader and the enhanced RTF loader supplied in the text loaders pack. The standard version did not perform very well. It failed to justify some of the text correctly, didn't always display it in the correct font or effect, displaying Trinity as Courier, and reported strange errors like font trinity not found. It did manage to copy the styles across and handled tabs and double spacing correctly.

The enhanced loader which costs £29 + VAT performed much better – as would be expected. It handled the different fonts and effects correctly and didn't give any strange errors when importing the file. It did fail to justify the first paragraph correctly, aligning it to the left rather then centring it.

Fireworkz

Fireworkz is the only one of the three packages that doesn't require a loader/module to import RTF files. The package correctly handled all the styles, effects and justifications in the original file. It did however alter the page margins to something rather strange and didn't double space the text at all. It was however, the only package that correctly handled the headers and footers that Write inserted.

Conclusion

Overall, if we don't include the standard *Impression* loader, each package handled the RTF file reasonably well.

Ovation Pro's filter particularly impressed as it is so new. It performed as well as *Impression's* enhanced RTF loader but doesn't cost any extra, and Beebug plans to develop it further if required.

Each package has its merits and faults and any of the three packages will suffice for importing RTF files, provided you use the enhanced loader when using *Impression*. *Impression* and *Fireworkz* also have the facility to export RTF files something *Ovation Pro* currently can't.

Psion's 3c and Siena

Psion has just announced the release of two new models of portable computer – the Psion 3c and the Siena. The Psion 3c is an updated version of the world renowned Psion 3a while the Siena has the power of a 3a in a case small enough to fit into a shirt pocket and is aimed at the electronic organiser market.

The Psion 3c takes all the features of the Psion 3a but has a restyled case, an enhanced application suite and built-in communications technology. The new application suite contains enhanced versions of Data, Agenda and Calculator and also contains a new file management program, Soundmaster (a sound manipulation package) and Notes (an electronic Post-It note).

The new communications devices are an IrDA compliant infra-red port and a RS232 serial port. The IrDA port can be used to communicate with printers and mobile phones while the serial port allows you to connect the Psion 3c to PC's, modems and mobile phones. The new serial port runs at 57,600bps and will make Internet access using the Psion 3c more cost efficient. Internet and Web browsing software are already under development by Psion.

The new Psion 3c is now available and comes with either 1Mb and 2Mb of memory and costs £339.95 and £399.95 respectively.

The Siena, on the other hand, is aimed at a different market – that of the electronic organiser and has a significant advantage over its rivals due to the impressive applications suite and memory capacity. It weighs only 183 grams, is powered by 2 AAA batteries and yet contains an application suite similar to that of the Psion 3a, and is supplied with either 512K or 1Mb of memory.

The machine, as with the 3c, contains an IrDA and RS232 serial port making communication with other Psion's and the outside world easy. It has a QWERTY keyboard, a high resolution LCD screen and costs £169.95 for the 512K version and £229.95 for the 1Mb version.

Web update

At the time of going to press the AU Portables Page Web pages are not quite ready but should be by the time you read this – keep an eye on the *Acorn User* web site at http://www.idg.co.uk/acornuser/ for more details.

The site will contain links to Psion and Pocket Book related web sites, an essential software page, a readers top 10, copies of previous portables page and a hints and tips section. In the next column I'll be presenting a guide to the new web site and details of its URL.

Pocket NetStation

A full-size keyboard is to be an optional extra to Acorn's NetStation. Maybe Acorn would be wise to consider an option to allow users to plug a Pocket Book into the NetStation and use its keyboard instead.

SparkPlug update

Until recently if you used *!SparkPlug* to decompress ZIP files you needed to fiddle around with the filenames once you had unzipped them, due to the fact that *!SparkPlug* didn't handle DOS extensions properly. The latest version, 2.25, does and if you haven't already got a copy then get hold of one – it makes life much easier. *SparkPlug*, v2.25 is available from various FTP sites and also from the David Pilling's web site at http://www.netlink.co.uk/users/pilling.

Contacting me

You can contact the Portables page by writing to me, Mark Taylor at *Acorn User*, Media House, Adlington Park, Macclesfield SK10 4NP, or by email to auport@idg.co.uk

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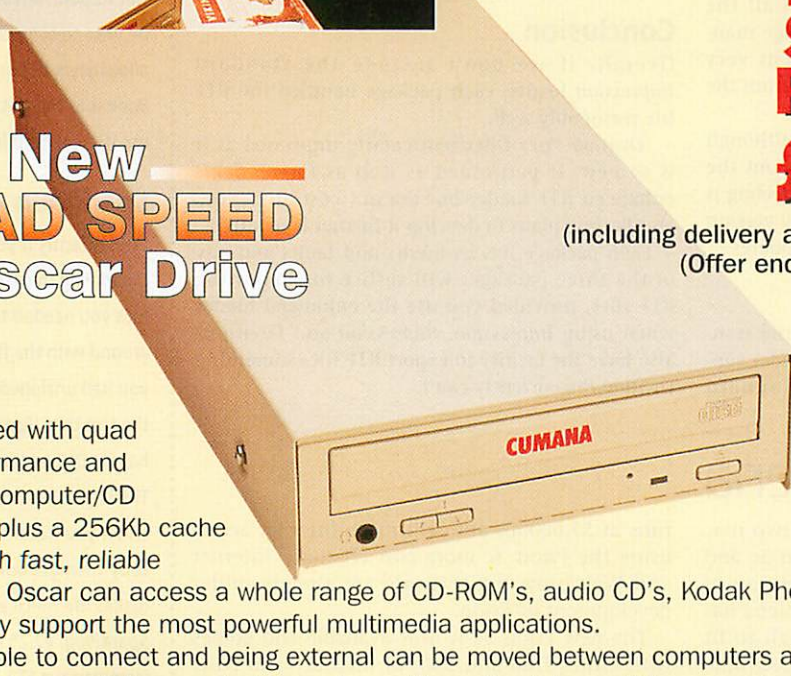
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cover disc



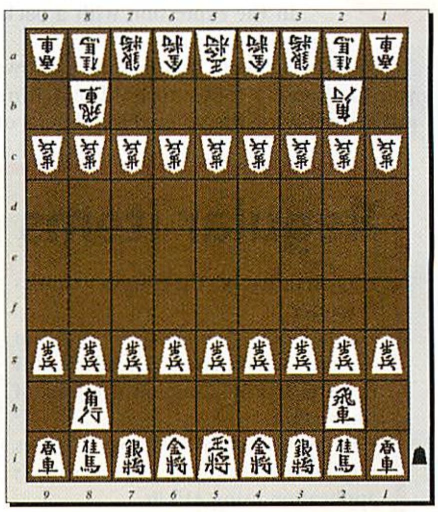
Shogi

Christopher Dearlove

This application may be used to control a game of *Shogi* and act as an aid to problem solving, including the computer finding checkmates. It does not include a computer play option — nor is it ever likely to, unless someone else wishes to collaborate with me to use it as the front end to such a program.

For a full description of the game and an introduction to its strategy and tactics you should get the book *Shogi for Beginners* by John Fairbairn (The Ishi Press, ISBN 4-87187-201-7). There is a summary of the game in the applications help file plus a complete description of the program itself.

Shogi is a Japanese game from the chess family, and of similar antiquity to the modern Western game of chess. Some terminology from chess is used by Western players of Shogi but may not have an identical meaning and must be used with care; for example, a Shogi piece named similarly to a chess piece may not have an identical move.



The two sides in a game of Shogi are conventionally named Black and White. Unlike chess the pieces are not coloured - ownership of a piece is indicated by which direction the piece (which is flat) is pointing. In conventional diagrams, and this application, Black (who moves first) is shown at the bottom of the board, White at the top.

The board is 9 x 9 spaces and the pieces are identified by the symbol on them. Japanese Shogi sets use ideograms representing the name of the piece, and these are also used in the West; however many Western sets use symbols representing the moves of the piece instead.

The latter type is simpler to use initially, but familiarity with the Japanese symbols is preferable and hence these are used by this application either in the form used on pieces, or the simpler form used in diagrams. Interactive help (available using the !Help application) and the legal move display function (both described below) allow the pieces and their moves to be determined without reference to the Japanese symbols, and hence this application may be used if unfamiliar with the Japanese symbols and then to learn them.

Shogi is also often played as a handicap game. In this case a number of White's pieces are removed and then White starts. There are a number of standard handicaps, which are available using this application.

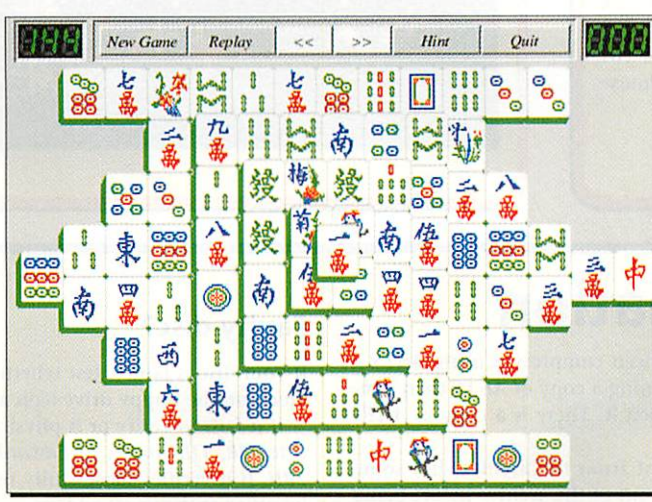
Note that the options provided here are not a simple list of grade differences. At a certain grade difference alternate games may use different handicaps; in addition some of the provided handicaps are unofficial and are rarely used. For fuller details see *Shogi for Beginners*.

Shanghai

Joe Chan

On starting the game, 144 mah-jong pieces are arranged in a neat pile. The object of the game is to remove pairs of tiles together until no tiles remain.

Only those which have at least one edge free of neighbouring tiles — the top tile or the far left/right ones — may be removed. Clicking on a tile which may be removed will cause it to be highlighted. If a tile cannot be removed, it will not be highlighted. Having selected one tile, you must select a matching one whereupon both pieces will be removed. If the second tile does not match the first, nothing happens.



If you accidentally select a tile or change your mind, you can deselect the first by clicking on it a second time. The display at the top left corner shows the number of pieces remaining - the one at the top right corner shows the time taken. The timer does not start until you select the first pair of tiles. Therefore, before choosing your first move, study the pieces and plan as far ahead as possible. If you manage to complete the game by removing all of the tiles and make it into the high scores, you will be prompted to enter your name.

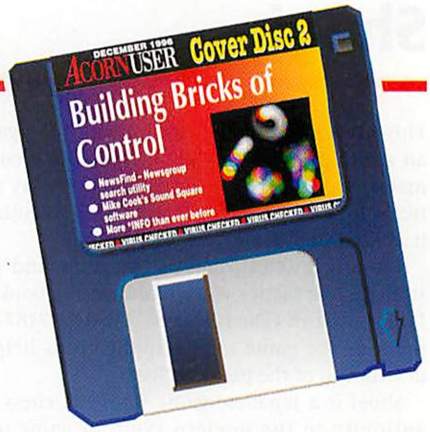
The hint option shows you the available moves if you get stuck. Pressing this button displays a window with four more buttons. The < and > buttons allow you step through the available moves. Each press of one of these buttons highlights a pair of tiles. When you decide to play one of these moves, click Select. The hint window remains displayed to allow you to see more moves. Click Cancel if you decide you don't need any more hints.

Using the hint option will deny you the privilege of being entered into the high-score table. The game can be paused at any time by closing the window, this stops the timer. Clicking on the iconbar icon will continue the game.

A description of the mah-jong pieces and more detail about the game controls are given in the program's help file.

NewsFind

Tony Houghton



PD Scheme

NewsFind adds the missing facility to search for patterns in messages stored by Newsbase.

Matching articles are copied to a folder so that they can be read by TTFN or Messenger. *NewsFind* makes use of overview files to speed up searching, so you need to use *Newsbase 0.55* or later and ensure that this feature is switched on.

When you choose a group to search you can either pick it from the menu or type it.

You can also type a hierarchy, using a trailing *, eg "comp.sys. acorn.*" to search all the groups within Newsbase beginning with comp.sys.acorn.

You can either confine a search to the contents of a specific header in each article or search the whole body, including headers.

The range of headers available is restricted to those consistently available in overview files, for speed of searching. Messages are searched on a line by line basis, and matching patterns apply to whole lines.

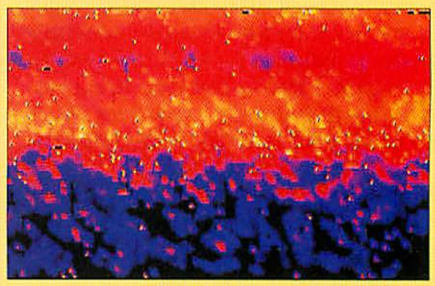
This means that if you want to search for "Tony Houghton" anywhere in a header or article you must wildcard the Match expression with "*Tony Houghton*" instead of just typing "Tony Houghton". A # character in the expression matches any one character, and a * matches 0 or more.

The end condition of a *-wildcard is either the end of a line (if the * is at the end of the expression) or the sequence that matches what follows the * in the expression. You can search for * or # characters specifically contained in messages by preceding them in the expression with a backslash \.

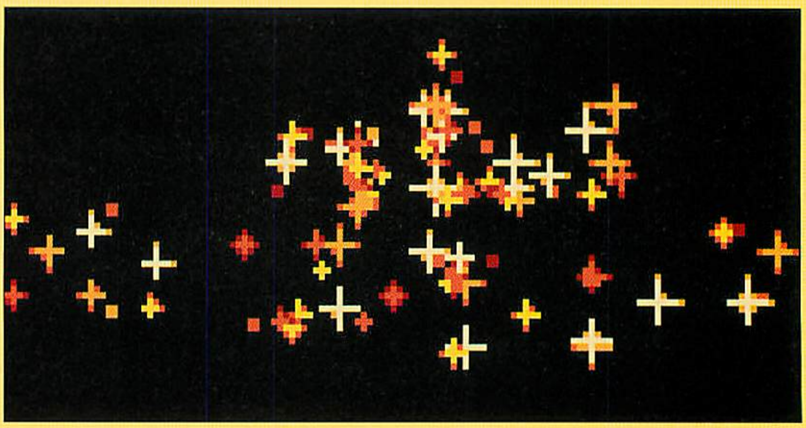
The Choices dialogue box allows you to choose a folder to hold matching articles, set a log file where brief details of each search are written, and to set a user. Setting a user allows that user's email to be searched. NewsFind does not support passwords.

Regular items

• Bucketloads of *INFO from graphics to games
• Mike Cook's Sound Square program — can work from Desktop but beware, it kills dongled versions of Impression
• Steve Mumford's Wimp C series implements dragging, plus a reader's application using AULib



GrimSmash from Graeme Jefferis



ItCouldBe form Nigel Stoner

Great Extras

• The demonstration programs for the PCA protocol
• The first section of code for the Write-your-own arcade game series
• The great BSE adventure game, see the Game Show (Oct '96) for details
• Lego Dacta control lab files for Conveyor belt model and Greenhouse control
• Update for the Lobster Fishing simulation

Disc information

The software on these discs has been compressed using *ArcFS 2* from VTi, and are opened by running a copy of *ArcFS* then double-clicking on the archive to open it. There is a copy of *ArcFS* on each disc.

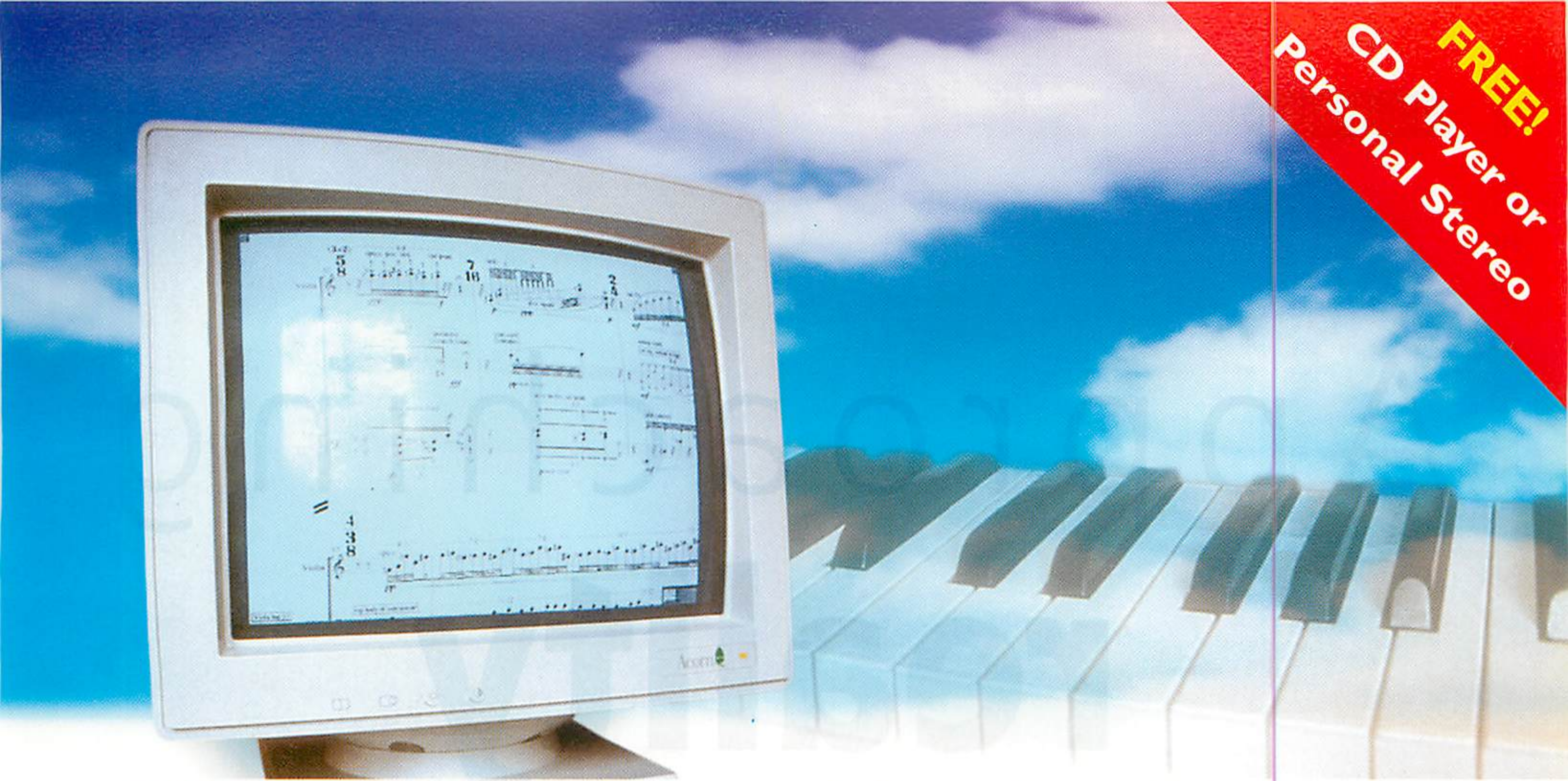
Most software will run straight from the archive, but some programs may need to be copied out of the archive before being run, uncompressing them in the process. Any program that saves a file to disc, for instance, will be unable to do so into the archives on the disc.

Faulty disc?

If your disc is faulty, test whether it will verify by clicking with Menu on the floppy drive icon and choosing Verify.

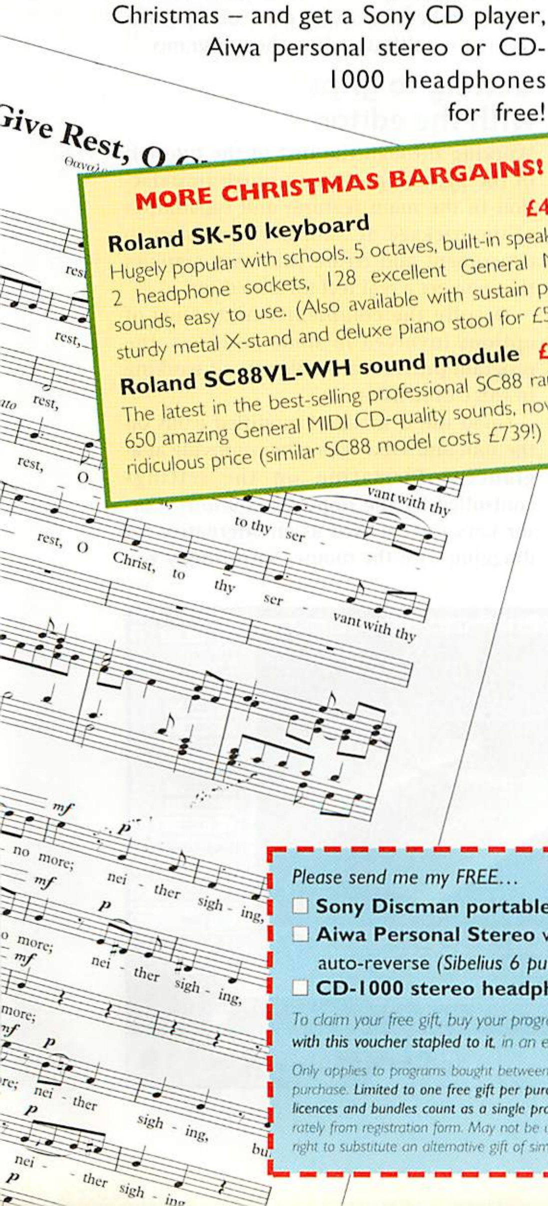
If it fails to verify or is physically damaged you should return it to *TIB, TIB House, 11 Edward Street, Bradford, Yorkshire BD4 7BH*. If it verifies successfully return it to the *Acorn User* editorial office at the usual address.

The *Acorn User* cover disc has been checked for viruses using *Killer* version 2.401 from Pineapple Software.



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– ***Times Educational Supplement***

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– **John Rutter** (composer)

"Sibelius 7 can notate, print and play a musical score at a pace even more rapid than Mozart at his most fecund… Imagine what wonders Bach could have worked with such technology"
– ***The Times*** leader column, 31.1.96

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Tel: 01223 302765 • Fax: 01223 351947
email: info@sibelius.demon.co.uk
http://www.acorn.co.uk/developers/sibelius/

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Approaching **reality**

Paul Wheatley looks at *TopModel*, the long awaited 3D graphics program from Italian coding team Sincronia

Presented primarily as a 3D editing package, *TopModel* can be roughly compared to the old Clares package, *Illusionist*. It offers 3D design and rendered output stopping short of ray-tracing. Its key feature is the quality of the 3D editing capabilities. As well as providing support for a wide range of creation and editing features, it can be used to produce complex 3D objects and scenes. Visualisation is definitely to the fore, with very rapid redraw speeds for the rendering of designs using phong shading.

The version I'm reviewing is the first commercial release of a package. The authors intend to develop it into the main 3D graphics program of choice for the Acorn. Already revealed in previous issues of AU are developments such as the new Gemini engine (October 96 AU) which demonstrate the commitment to take the software further. The big question is, does this first release form a viable core to get the ball rolling?

Program interface

In contrast to the typical four-view system that presents plan, front, side and 3D views of the scene in one window, *TopModel* uses a single view, filling the whole of the main window. Two main tool bars present a large array of buttons and features including the view selection box. This shows a 3D picture of a cube and allows you to change the view in the main window by clicking on the corresponding side of the cube. The old *Euclid* package used a similar method – it's a great way to relate the view selection and display in an intuitive way.

The large number of buttons on the two main bars can be a bit daunting at first, but the grouping and organisation is very good. One point to note is the application specific help system which you have to turn on from the preferences window. This makes it a lot easier when you're starting off – the manual should point this out at the beginning.

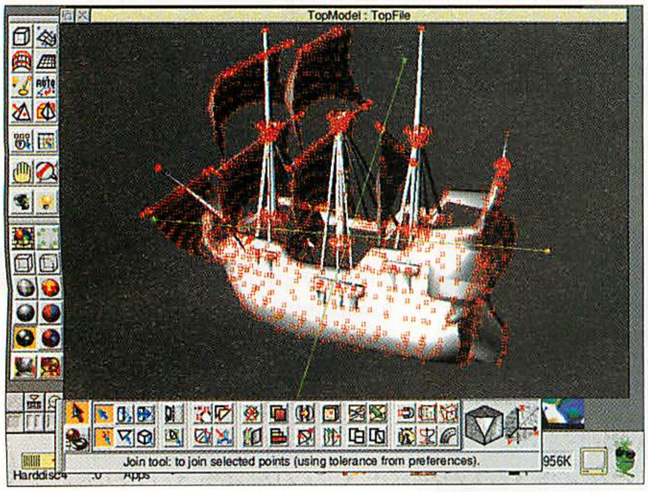
The main window is a little strange in ordinary desktop use. For some reason, it can only be dragged horizontally in small steps (to aid fast redraw) and cannot be moved off the screen regardless of the global settings you have for the desktop. Violating the RISC OS style guide in this way is rather annoying, particularly when trying to multitask with other programs.

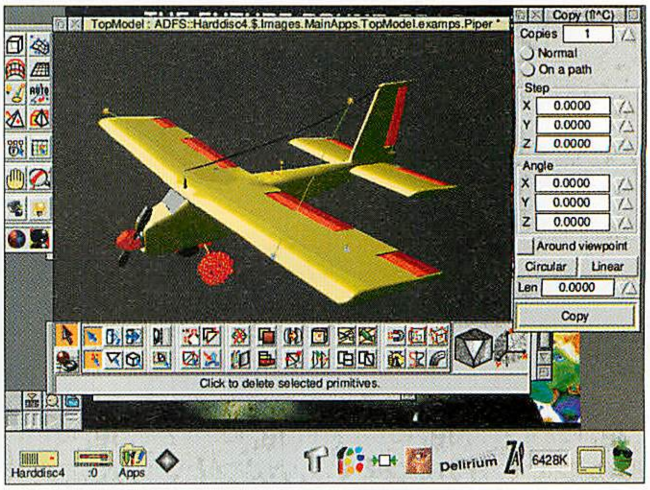
Getting to grips with the editor

Working through the first of the tutorials in the manual provides a rough introduction to the main features and capabilities of the package. It's not until you start to experiment and create your own graphics that you get a real feel for the editor.

Despite the complexity and range of options involved in some processes, the program provides a usable way of working in three dimensions.

Good use is made of modified icons on the tool and view bars which provide at-a-glance information on the settings controlled by the respective buttons. Cursor keys can be used as an alternative for dragging with the mouse. Surprisingly you





have both fast movement and accuracy. Selection and creation modes organise related tools together and streamline main processes in an intuitive manner.

Scaling and dragging uses a special precision method that allows you to drag objects using the mouse with pixel precision. In most graphics packages it's necessary to keep changing the mouse speed for certain operations. *TopModel* effectively does this for you. It's this kind of feature that shows how good the package is. You get the feeling that the authors have written the program, sat down and had a good go at using it then taken on board this experience and put it back into the program. Proper testing is essential for any program of this complexity, but all too often this important stage in a program's development is missed.

Editing features are comprehensive, with simple-to-use object control points for individual adjustments or full-on distortion or accurate transformations for complete objects. Object creation is also well supported with extensive support for lattices and a range of primitives. Further objects can be managed using the excellent library system. Paths form invisible markers with which to manipulate or act as guides for the creation of new objects. Exact features are too numerous to describe here, but suffice to say, there are plenty to discover.

You get the feeling that the authors have written the program, sat down and had a good go at using it then taken on board this experience and put it back into the program

On a RiscPC the redraw speed in wireframe display mode is instant (even for complex objects). The filled and phong-shaded modes are actually just about usable for editing in, despite being much slower. This makes it much easier to visualise designs as they take shape. No need for several minutes to ray trace a preview picture when a full-resolution phong shaded view can be seen in seconds.

Having used a wide range of 3D editors, I certainly recommend *TopModel* for its core editing and manipulation facilities.

The manual

Making a 3D package easy to use is always a tricky business. Having handled many user-friendly packages that can be tackled without glancing at the manual, it's always a bit of a shock when I look at a 3D editor. Manipulating objects in 3D will always be a complex task but by saying that a swift read through the manual is necessary, I'm not putting down *TopModel* in any way.

As it stands, the main content and areas covered are about right. This includes two tutorials (which are essential), several reference sections and plenty of summaries, FAQs, and hints and tips. The introduction leads you into the package well, and the tutorials get you working with the software straight away. It manages a balance between providing enough description for the 3D beginner and not including too many basics to put off the expert.

The main problem with the manual lies in the translation. Without wishing to offend, the grammar used by the Italian authors isn't perfect. The difficult task of describing complex 3D manipulation is handled well, but the high frequency of grammatical errors is annoying and sometimes a little confusing. Hopefully the relatively trivial task of putting this right will be carried out soon. My only other criticism is the lack of a proper index (the index included is actually a contents page) which makes it very difficult to look up particular functions for further help.

TopModel in use

Full support is given for multiple light sources and a good range of surfaces is provided. Texture mapping, transparency and refractivity can all be controlled. The one major omission is anti-aliasing which would dramatically improve final image quality. A lesser problem occurs when zooming in on an object – polygons are clipped by not drawing them in when they hit the window edge.

The output from TopModel can take several forms. In its most obvious form, the views in the main window can be used, and the quality view bar presents everything from wireframe to full phong shading. For anything more than 256 colour output however, it's necessary to save out a 24-bit Clear file. A simple option to kick in a single-tasking, full screen, 24-bit picture would have been useful here, but after a quick save to ChangeFSI the output produced is very nicely shaded. The only problem is the changes in lighting which often create completely different colouring results to those presented in a phong shaded edit window.

The 24-bit output can be taken further, to output a series of Clear files which form a simple film or "fly by" of the scene. Several controls are provided but more development in this area would certainly push TopModel into the professional league.

Vector output can be saved out and converted direct to POVray, DXF or GEO. Working in reverse, the conversion utilities can import a long list of formats with varying degrees of completeness. These facilities certainly give the package more scope, but to get ray traced output from TopModel designed scenes is still not easy.

More comprehensive export facilities that support foreign ray tracer formats in full is the solution. I'd like to see the inclusion of the PD ray tracer, POVray, already set up to run with TopModel.

Regardless of whether the editor is good or not, if professional output cannot be achieved from the program, then it's not worth using. This isn't quite the case with TopModel, but it's very important for the authors to keep things moving in this area (would this be better as - ...to keep this in mind during further development). A professional quality ray tracer that takes output direct from TopModel and supports all the same colour, light and surface settings, would be the ideal solution.

Conclusion

Looking deeper than the flashy "realtime" graphics and comprehensive editing features, *TopModel* is a quality package which should, with continued development, go a long way. It's ridiculous to expect a program of this complexity to be perfect in its first release but the route that the authors take next is crucial. Sincronia is aiming to work with users during the development of the package, and is providing support with regular *Top Modeller* magazines. The next version of the graphics engine is nearly ready and the future looks bright for this recommended package.

• *Many of the suggested improvements are addressed in the new release of TopModel which will be available at Acorn World.* AU

Product details

Product: TopModel
Authors: Sincronia Multimediali
E-mail: s64922@galileo.polito.it
Supplier: Spacetech
Address: 21 West Wools, Portland, Dorset, DT5 2GA
Tel: (01305) 822753
Fax: (01305) 860483
E-mail: sales@spacetec.demon.co.uk
Price: £99 ex VAT

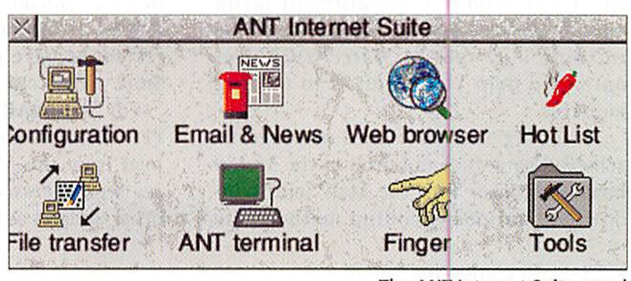
David Dade looks at the ANT Internet Suite Release II

As sweet as URL?

The *ANT Internet Suite* was first released at the Acorn World Show in October 1995. It quickly lead the field of commercial Internet access software for Acorn 32 bit computers at the modest cost of £99 + VAT.

Most users acknowledged that its performance, notably in its *Fresco©* World Wide Web browser and drag-and-drop FTP client, edged ahead of the competing commercial and freeware packages, but as with any new software project, there were parts of the *Suite* that were not perfect.

In March 1996 ANT announced that the *Fresco* WWW browser was be developed for Acorn Network Computers and that this would benefit the product for the rest of the Acorn platform. After an extensive and ongoing beta testing program, Release II of the *Suite* went out in September 1996. It is to ANT's credit that almost immediately, further changes and improvements have been made to Release II as a result of comments made by users both to ANT and in the Acorn newsgroups.



The ANT Internet Suite panel

Get up and running

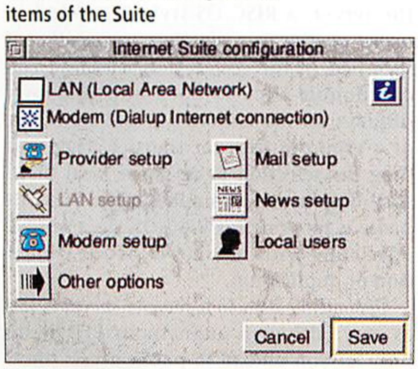
The Suite comes on two or four discs in a smart folder with an elegant spiral-bound manual. I'd noted the serial number on the first disc was in a text file and was pleased to find I could drag-and-drop it in to the installer program's window. The *ANT Suite* uses drag-and-drop extensively elsewhere to very good effect.

Built-in configuration details of Internet Service Providers in over 50 countries helps you get up and running very quickly. More complex settings have sensible defaults that you can alter as experience is gained. Essential items needed to hand are your country, location and ISP name, account name and password, your IP address in some cases, and modem and serial port type and connection speed – Local Area Network Ethernet operation is also supported.

The Suite panel

One of the eight main functions offered by the Suite panel is configuration. The manual takes you through this in detail and although you could start browsing the Web straight away after installation, some of the other functions of the suite may be invoked by pages you visit, so it's worth checking all the settings.

Buttons select the configuration items of the Suite

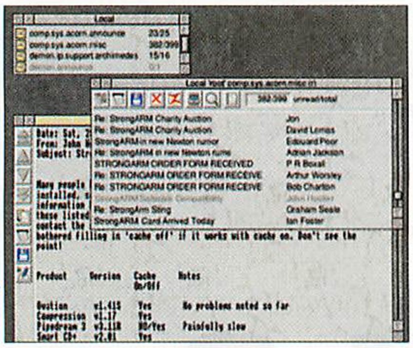


Marcel

The Internet Suite panel also offers the *Marcel* e-mail and News client, *Fresco* World Wide Web browser, drag-and-drop File transfer, the *ANT Telnet* terminal and the real gem of the Release II – *Hot List*. The *Finger* function allows you to see information about other users and servers and a further selection of specialist Internet tools are available.

E-mail and Usenet News transfers are treated separately by the Suite, but are read and replied to using *Marcel* client readers. Much improved since the first release, *Marcel* offers plenty of functions for subscribing to newsgroups, reading, replying and storing articles in folders. Welcome additions are the various sorted message displays including newsgroup

As sweet as URL?



Reading about the StrongARM with Marcel

messages sorted by subject thread – at last!

It seems that people either hate *Marcel* or love it. I wasn't fond of the first incarnation, but the Release II version is winning me over. I still find menu trees confusing for some functions like marking all messages stored in a group as unread, which can require three different menu selections. I recommend turning on all the warning messages in *Marcel's* Choices option to help you get used to posting messages.

Attaching files to e-mail messages is achieved by a drag-and-drop to the *Marcel* Postbox icon or into the Mail Send window and various encoding methods are supported, of which MIME and UUencode are the most usual.

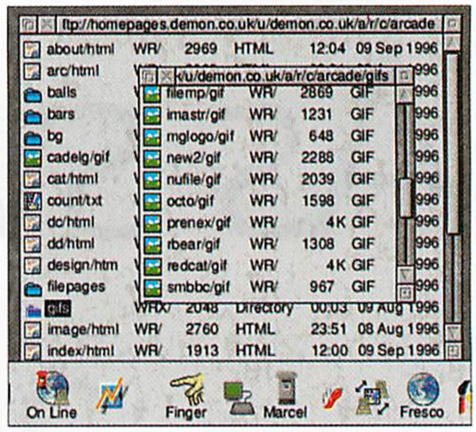
Beside the subject summary in the *Marcel* window, messages received with an attached file show a file icon which can be dragged to a directory viewer. Don't attach MIME'd files to ordinary newsgroup messages though, or you may face flames from the unofficial 'Campaign against MIME'.

Message forwarding, bouncing, aliasing, mailing lists and multiple pass worded mailboxes are other *Marcel* features that Demon account holders and others with unlimited user names will find useful.

If you have a POP3 account with a single e-mail address, you will have to wait for a version with the incoming mail filter system fully implemented to place incoming mail in separate local mailboxes.

ANT tells me that the slow speed of news download reported by users of early Release II has been investigated and corrected, as have problems with using the Suite with *Acorn Access* networking.

For StrongARM compatibility, a new PPP Driver module is available for download from the ANT Web site, from which registered *Fresco* users can get this and other updates as they become available.

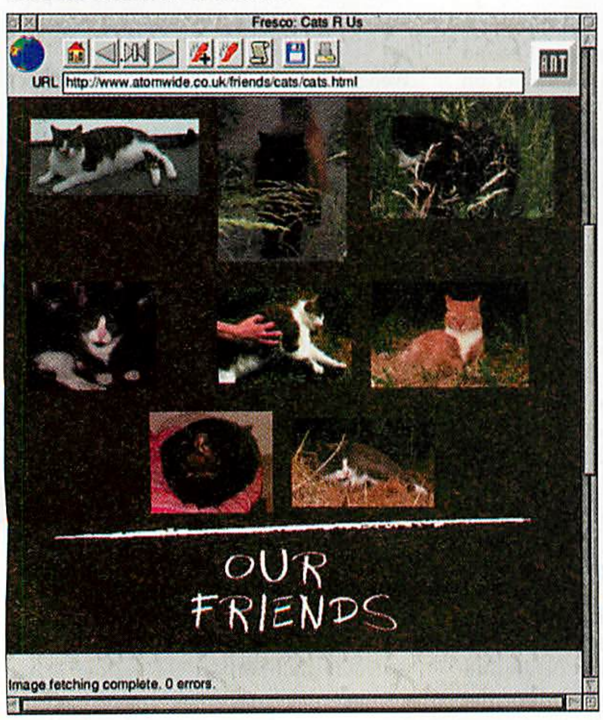


The Ant Suite FTP client keeping the home pages burning

As before, *Fresco* can save pages as HTML, text or *Draw* files including images and allows you to grab individual images in original form or as RISC OS sprites. Multiple pages can be fetched by clicking hotlinks with the ADJUST button.

Overall the browser is easy to use and has very useful drag-and-drop features – you can now drop a text file containing an http address into its URL window, or copy the URL that's there by dragging the line of text into an editor window.

Some cats in tables, not on tables



Fresco

Fresco is the Web browser chosen for the Acorn Network Computer. The latest version for the *ANT Internet Suite* includes support for tables and client-side image maps, as well as progressive rendering of GIF, PNG and JPEG pictures which build-up with increasing definition as they arrive. Although we'll have to wait a bit longer for *Java*, *Fresco* now supports animated GIFs.

More *NetScape* and HTML 3.2 extensions are supported in this latest version and *Fresco* pages look good and render very speedily. There are still some tweaks to be finalised though, such as table borders and the display margin width, but these are quite minor points.

The FTP client

The *ANT Suite* FTP client is a dream to use and mimics almost completely the RISC OS filer. The FTP client loads to the icon bar when chosen from the panel and clicking on it opens a connection window showing a default server, user name and password from the *Hot List*. You can enter other server details into the window or select from the list icon in this window. If you use the separate *Hot List* utility to access an FTP site, *Fresco* is launched with an ftp:// URL instead.

After a short delay while connecting to the server, a RISC OS-style filer window opens on the root directory, or another if specified in the connection window. You can double-click to open new directory displays on the remote site and select one or a group of files for transfer. Then just drag the selection to an open local directory display on your machine. If a file name is too long for RISC OS, do a normal Filer copy-with-rename to avoid truncation or duplication.

Uploading files to a remote server is just as easy, although anonymous FTP logins only let you upload to public access direc-



Something to try at home this weekend

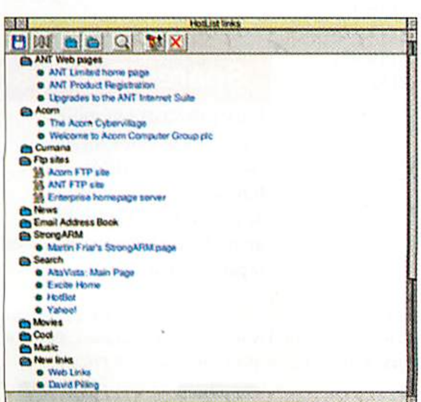
tories. To send HTML and image files to a homepage server, you need to use your account name and log-on password in the connection window. Transfer to a homepage site is then particularly easy – you can send a whole selection in one drag from your local source directory.

The *ANT* FTP client will automatically substitute for dots, any slash characters you have in your RISC OS filenames so that your page/html files are saved on the remote site as page.html and images/gif become image.gif.

Hot List

Hot List is new to Release II and its smoking chilli icon hides a really excellent URL list application. On clicking the icon, a window opens showing a supplied list of named folders for URL details including Acorn, ANT, FTP sites and New links. Double-clicking a folder opens it and the list of URLs is displayed in a familiar directory-tree style. Clicking on one of these launches the appropriate application from the Suite – *Fresco, Marcel, FTP Client or ANT* terminal.

What Hot List links look like



Each time you click on *Fresco's* Add-to-Hotlist icon, the URL and page title are added to the list of New links in *Hot List*. You can create new folders, add Web, Mail, News, FTP, Telnet and Gopher URLs to the list The really nice feature is that entries can be dragged around the window to re-order and re-arrange them to your taste.

Although *Marcel* contains its own address book, an e-mail address book can also be created in *Hot List*. Clicking on a Mail entry opens a *Marcel* send window immediately, or loads *Marcel* and prompts you to connect to the local e-mail server. Other nice little touches make *Hot List* really nice to use, such as being able to save the folders' open and closed status.

Hot List is new to Release II and its smoking chilli icon hides a really excellent URL list application

The *ANT* Terminal offers a VT220 emulation by default and allows you to login to a remote computer system by entering the Internet address and port number if required. You will need to enter a valid user name and password as prompted from the remote system. When Telnetting to a suitable host, ANSI colour and cursor control can be enjoyed and this works well with such services as the *Arcade BBS TelnetIn* experiment, so you can log in to the BBS from anywhere in the world for the cost of a call to your ISP.

The *ANT* terminal also supports downloadable fonts as used by the French *Minitel* system and can use the *Hot List* application to store addresses and launch calls. Telnet sessions can be spooled to a file and vice versa and selections marked and cut from the terminal window. It would be nice, but probably non-standard, if the default VT220 emulation defined all the characters in the ANSI set so ANSI graphics could be displayed.

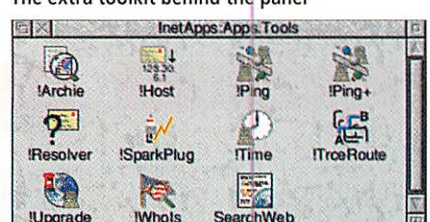
New tool applications

The eighth Tools section of the Suite opens a new panel of tools applications, such as *!Ping*, which tests your connection to another site, *!Time* to display and optionally set your computer's clock to network time and *!Host* which finds out the IP address of a named host system. Several other utilities are included in this section.

For automating mail and news downloads, the RISC OS task alarm function can be used – this makes the Suite connect during the night, starting mail and news transfers automatically with a short 'idle timeout' set to drop the line quickly afterwards. The manual supplied for review mentions this technique but doesn't explain how it's done – one of the few omissions.

The *ANT Internet Suite Release II* is a well presented package that improves considerably on the first version. It's a premium product at a premium price, but what you're paying for is easy setting up, reliable operation and good technical support. It's still not perfect, but if it's good enough for Oracle Inc... AU

The extra toolkit behind the panel

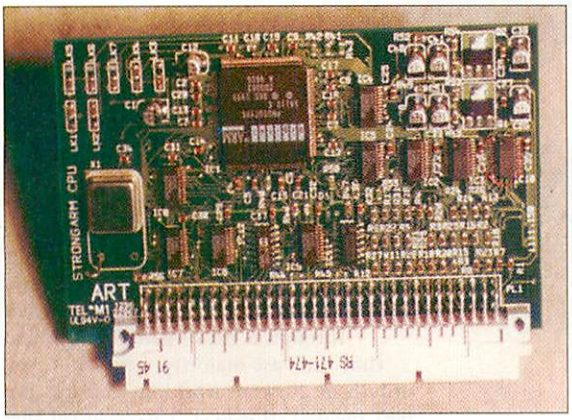


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Fax: 01223 567801
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Also available from Acorn dealers and Xemplar agents

StrongARM arrives

Mike Cook steps back in amazement as the superchip drops through his letterbox



'I don't believe it', I exclaimed, Victor Meldrew style. My StrongARM card had arrived 10 days before the date Acorn unofficially hinted as the earliest shipping date. Determined to do this by the book, I sat down and read the instructions.

In essence the process is simple – replace two chips and a processor card. To ensure trouble-free installation there is a procedure to follow. This might sound daunting but the simpler your system, the easier it is to upgrade. With a complex system you're probably technically competent anyway so the extra work should not be too difficult.

It may look the same..

When fitting the StrongARM you must understand that it is more than a simple upgrade. You're converting the machine into a different computer – on the surface it may look the same but deep down it is quite different.

The idea is to strip it down to its simplest configuration which means removing all the hardware add-ons. Next de-install all copy-protected software – some packages allow a limited number of installs from one set of master discs and de-installing will allow you to reload its modules in the new system. To be on the safe side you should also back up important applications and files.

Installing the new operating system

There are two steps to take. First, run an installer program which makes four new folders – !Boot, Apps, Printing and Utilities. Your old folders of the same name are transferred into one called InactivRes – this is so you can copy over your extra applications later.

At this stage comes perhaps the most difficult part for most people – replacing the operating system ROM chips. Acorn supplies a static earth strap which should be placed round your wrist and clipped onto the serial port's metal shell. The removal of the old chips is a little tricky. I eased them out with bent nose pliers — the problem with using a straight screwdriver is that there is not enough room to get it under both ends.

When fitting the StrongARM you must understand that it is more than a simple upgrade. You're converting the machine into a different computer – on the surface it may look the same but deep down it is quite different

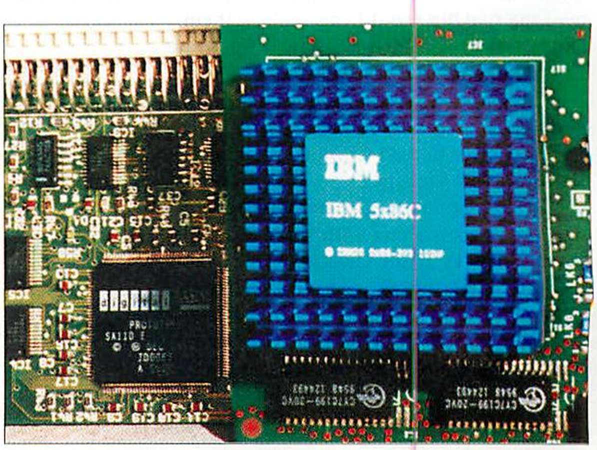
With the old chips removed, the new ones can be put in. There is a knack to this. I like to make sure all the pins are straight before I push them in. Do this by applying slight pressure to the whole row while resting it on something conductive like the inside of the case.

With the chips in place the new operating system could be tried out on the old processor, but you are advised to go straight to installing the new card. Hold down the delete key, bate your breath and switch on. Hopefully your first pleasant surprise will be when the desktop appears much quicker than before.

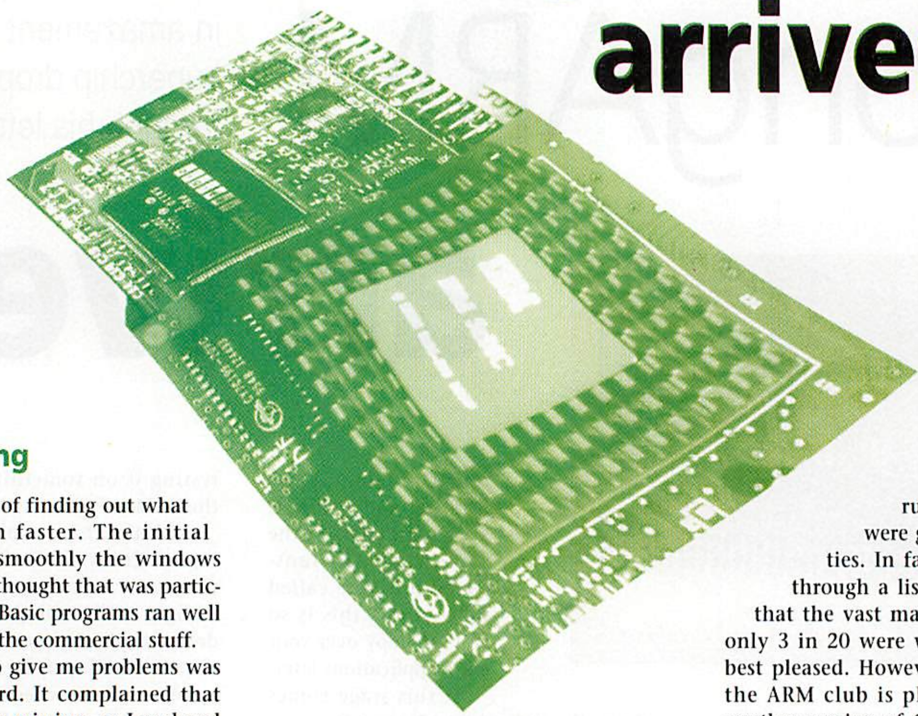
You now have the long haul of setting all the configure options to get the computer back to how you want it. This will involve reinstalling utilities and hardware drivers. It's best to do this one at a time, thoroughly testing it before you move on. I thought my system was quite simple but it's surprising how much I'd added.

It involved switching the computer off, connecting up a piece of hardware, powering on again and testing. The instructions suggest reinstalling the drivers that patch the system from the original disc rather than just copying the modules from the inactive resources folder. I would recommend that course of action as I had a few problems getting things to work, when I tried to be, what I thought was, efficient.

So I slowly rebuilt the machine and got all the extra hardware and system software running.



StrongARM **arrives**



Faster running

Now came the task of finding out what ran and what ran faster. The initial reaction was how smoothly the windows resized, as I hadn't thought that was particularly slow. All my Basic programs ran well along with most of the commercial stuff.

The first thing to give me problems was *!PC* for the 486 card. It complained that module SSound was missing, so I replaced it from the inactive resources, whereupon running *!PC* promptly crashed the system. Back to the instruction leaflet. There's a new version of the module on the discs – replacing it cured the problems.

One mistake in the instructions was how to upgrade the *!ARMmovie*. It says to merge the 'shapes' directory with that in the old copy. I found that these were the same but some films did not run so I had to copy over some of the Decomp folders that were missing both from the floppy disc copy and the copy on the accompanying CD.

On this point I must apologise about last month's preview. In my conversations with Acorn I understood that the images from the slide show were on the CD. It turns out they're not. When Acorn talked about 'all the images and videos' they did not mean those from the slide show. If anyone has deleted them, like me, in anticipation and would like them back, please send me five discs and I can replace them. On the subject of the slide show, I found it would not run. This was because a module inside *ChangeFSI* has been renamed. The simplest solution was to change line 70 in the slide show to read CFSIjpeg as opposed to the original CFSI-jpeg.

The CD is an interesting treasure trove of demos and gems along with some dazzling movie effects from Oregan and some archive NASA footage. There's the tumbling picture demo that should be moved into the same folder as the slide show along with some clan rolling demos. A snapshot of Acorn's FTP site provides application notes and circuit diagrams of some of the older machines. There was also an astronomy folder but I was disappointed to see it contained just two applications, Spotter for satellite prediction and Moon Tool. The latter shows you the phase of the moon at any time, but, as it was written by a New Zealander the picture it produces is upside down so you might think it isn't working correctly. There's a lot more exploring I've yet to do.

Problems

All was not sweetness and light. A few days later I got a crash that removed all storage icons when I tried to look at the format menu on the floppy disc. This turned out to be Computer Concepts' *MacFS*, but with that disabled I could at least format native discs. Some applications did not run – in the main they were games and sound utilities. In fact, my son Alec went through a list of games and found that the vast majority would not run, only 3 in 20 were working – he was not best pleased. However, I have heard that the ARM club is planning to bring out another version of *GameOn* to help try to correct these problems.

> ...there are always casualties in any system or software upgrade. Less adventurous souls might like to wait until all the incompatibilities have been sorted out, but remember, there are always going to be applications that will never be upgraded

Unfortunately most of the PD stuff that doesn't work contains contact e-mail addresses that the authors used at University some years ago and are now out-of-date. Most games simply won't run, some run too fast to play, on the other hand *Colony Rescue* is too slow! Such was Alec's frustration he painted a graffiti style background of 'strong arm rules' with a large NOT sprayed over it. There are some games that can be played by typing *Cache off, but this slows the machine down tremendously and makes the games impossibly slow, but it's worth a try if you run into trouble.

Still you can always plug back your original processor card if there is something really vital you need to use. Remember this is a new computer and there are always casualties involved in any system hardware and software upgrade. Those less adventurous souls might like to wait until all the incompatibilities have been sorted out, but remember there are always going to be applications that will never be upgraded. Acorn has a Web page listing software that runs. I've decided to put up a page about the programs that don't and you can get it through http://physics.mmu.ac.uk/Physics/Acorn/.

On the whole I'd rather have the StrongARM than not – Alec is not so sure. One final question – who got the first StrongARM card? My packing note said number 48 but I happened to be talking to Bruce Goatly on the day it arrived and asked him what his was, and yes, he was number one. AU

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Graphically correct

Stuart Halliday – Web manager of the Acorn Cybervillage – presents a hints and tips guide for producing graphics to insert on your Web pages

Graphic images that appear on Web pages tend to fall into two types – GIFs or JPEG files. You can't use Acorn Sprites as only Acorn machines are able to display them, and it is very unlikely that you would want to restrict your pages to Acorn only Web browsers.

But which type should be used? A good rule of thumb guide is to use GIFs 99 per cent of the time, mainly for simple drawings or icons leaving JPEG for those images which are of high colour content or contain lots of detail.

Selecting the right tools

As Acorn users we are lucky in having supplied as standard with our machines a fairly powerful set of tools – *Draw*, *Paint* and *ChangeFSI*.

With these and a few PD programs, it is possible to produce some stunning graphic images. The programs I would recommend to use are *Creator* by John Kortink or *WebGif2* by Ian Jeffray. These two make an excellent job of converting sprites to the GIF format.

Creator can be found at <http://web.inter.nl.net/users/J.Kortink/>

Web2Gif can be found at <http://www.foobar.co.uk/dialin/ganymede/riscy/products.html>

GIF files have two important features that we need to make use of to make good graphics:

• Transparency – the ability to make one of the colours used transparent. This is similar to a Sprite with a mask except that it doesn't double the size of the file. Oddly few Acorn packages allow you to alter the transparency of a GIF and only *WebGif2* allows you to just point and click at the actual image to adjust this setting.

• Interlacing – when a GIF image is being transferred (downloaded) to a Web browser it can't normally be seen in its entirety until all the picture is completely loaded. By creating an Interlaced GIF you will see a sort of venetian blind-like look, with the gaps gradually filling in as more of the image is downloaded. This allows the viewer to see something of the image even if they have a slow Modem or the Internet is busy.

JPEG file creation is also easily done as the latest version of *ChangeFSI* (V1.15) allows JPEG saving for RiscPC/A7000 owners running RISC OS 3.5 or greater. RISC OS 3.1 owners will need to get a copy of *!Spr2Jpeg* V1.07 or *MakeJpeg* V2.00 in order to create JPEGs.

ChangeFSI can be found at <http://www.art.acorn.co.uk/ftp/riscos/releases/changefsi.arc>

Spr2JPEG can be found at <ftp://ftp.demon.co.uk/pub/mirrors/hensa/micros/arch/riscos/d/d154/>

MakeJpeg can be found at <ftp://ftp.demon.co.uk/pub/mirrors/hensa/micros/arch/riscos/d/d172/>

The JPEG's main feature is its flexible high compression ability, a 1Mb Sprite converted into a JPEG can easily be turned into less than 50Kb. If you are aware of its limitations in retaining picture quality then they are marvellous at displaying large photographs on Web pages.

JPEG files haven't the ability to be make any of its colours transparent. There is a rare form of JPEG that allows interlacing which is called a 'progressive JPEG' just to confuse everyone. Very few Web pages make use of this type of JPEG so, in my opinion, you can probably forget about this type for now.

Image libraries on the Net

Icon Library
http://www.cit.gu.edu.au/~anthony/icons/
Truman's Texture World
http://www.websharx.com/~ttbrown/tilelink.html
Free Backgrounds
http://www.tgn.net/~pambytes/free.html
Transparent/Interlaced GIF Resources
http://dragon.jpl.nasa.gov/~adam/transparent.html
The Icons and Images Bazaar
http://www.iconbazaar.com/

Reducing file size

For creating or manipulating a Sprite file from scratch I'd say *Photodesk* by SpaceTech (£132) is probably the best tool. For altering the amount of colours in a GIF file you really need *ImageMaster* by David Pilling (£30). This is useful if, for example, you've only used ten or so colours in an image and saved it as a 256 colour GIF, you're making the image much larger that it really needs to be.

Running down the edge of the Acorn Cybervillage front page there are nine small GIF images. Originally they were 256 colour images with each one taking up around 2737 bytes. Once converted to a Palette optimised 16 colour GIF using *ImageMaster*, that figure went down to 1909 bytes.

That doesn't sound like a large reduction, but as there are nine of these on the front page that would mean it would take around 16 seconds for an average modem to finish downloading the images. When converted to 16 colours they only take 11 seconds, a useful time saving to the person viewing your pages.

If you want a rough guide to how long it may take someone to download your web page count *the size of all the graphics* not forgetting the Web page as well, then divide the total by 1,500. It really shouldn't take more than 30 seconds. In general, a person casually viewing your pages would probably give up and go somewhere else if they take too long to download – this tends to have been forgotten in the production of many commercial pages.

Another thing to remember is that most Web Servers will treat your files as 1Kbyte blocks, so a 100 byte file takes up just as

on the Web

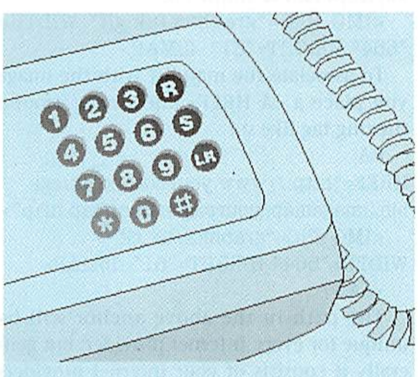
much room as a 1Kbyte file. In the above case the 2737 byte GIF file actually uses three 1K blocks or 3072 bytes of your precious Web space.

Using clipart

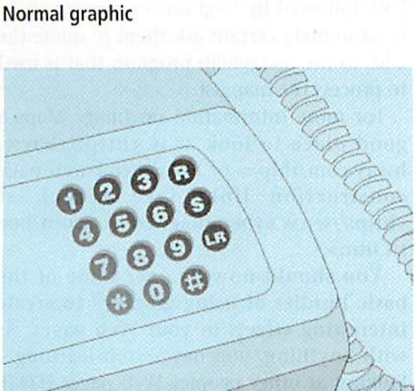
You can, of course, use sprites by converting them to JPEG or GIF first and you can also use *Drawfiles* or *ArtWorks* files by using a little ingenuity.

To do this, load a Drawfile into *!Draw* and scale it to appear on screen (preferably in a 256 colour screen mode) at the size you want it to appear on your Web page. Use *!Paint* to perform a screen shot of the drawfile, which you then convert into a GIF file.

The only trouble with this method is



Normal graphic



See the difference when anti-aliased

that *!Draw* does not perform anti-aliasing on the lines of the image so they can look very jaggy and small text will look distorted.

There is another little trick to overcome this. Find a copy of any of the *Impression* family of word processors, a copy of *ArtWorks* or the *ArtWorks* file viewer (*!AWViewer*). You'll find that you can place a *Draw* or *ArtWorks* file in a frame and set the WYSIWYG or Quality menu option to anti-aliasing, before grabbing a screen shot of the image using *!Paint* as before.

This greatly improves the end result. In fact, the ability to generate anti-aliased graphics for a Web page for effectively no extra effort, gives your Web graphics a leading edge over most of the other PC or Mac designed pages you'll see.

So, you've got your images and now you want to use them on your page. The first thing is to create the bare bones of a Web page by typing into an empty text file the following lines and saving it to disc.

```
<HTML>
<HEAD>
<TITLE>The name of my web
page!</TITLE>
</HEAD>
<BODY>
all the stuff goes in here!
</BODY>
</HTML>
```

Once you've got conversion tools you can find a large source of raw material from normal Clipart libraries. There are huge quantities of bitmap clipart in the form of JPEG or GIF files on the Internet itself. These can be found simply by using a Web Search engine like AltaVista or WebCrawler and get them to search for the words 'background' or 'textures', etc. Remember to check that any images you use are copyright free, if in any doubt just e-mail the Web site manager and politely ask if you can copy them.

The first graphic you may want to place on your page is a background image. This graphic is tiled to fill the web page. You can usually find literary thousands of suitable background images on the Internet and there are a number of web sites which are set up to provide you with these images – see box.

The command to use backgrounds is an extension to the BODY tag and goes like this.

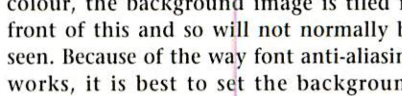
```
<BODY BGCOLOR="#FFFFFF"
TEXT="#000000"
BACKGROUND="graphics/backgr.gif">
```

BGCOLOR sets the default background colour, the background image is tiled in front of this and so will not normally be seen. Because of the way font anti-aliasing works, it is best to set the background colour to be as close as possible to the main colours in the image you are using.

The value used here is &FFFFFF which is in hexadecimal and refers to the Red, Green and Blue (RGB) values of the colour (&RRGGBB), i.e., white is &FFFFFF and black is &000000. I use the excellent PD program *!ColourDef* by Mrs A. R. Miskin which was on the September *Acorn User* cover disc in the StarInfo directory. This allows you to pick a colour and works out the hexadecimal values for you.

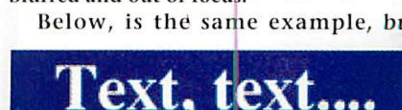
TEXT is the default colour of the text and is once more in the RRGGBB hexadecimal format.

BACKGROUND points to where the graphic file lies relative to the page and in this case the file is held within a directory (which lies in the same directory to this page) called 'graphics' and is called 'backgr.gif'.



Above you see a dark blue background graphic with white text and a BGCOLOR="#FFFFFF". The text looks blurred and out of focus.

Below, is the same example, but



Graphically correct on the Web

with BGCOLOR="#004499" which is the RGB values of the dark blue colour. I think you'll agree that the text looks much better.

A good point to mention here is the way files have to be named if you want to place them on the Web. On an Acorn system all files and directories are separated in the Filer by the use of the full stop ('.'). On DOS and UNIX systems the forward slash ('/') is used to separate files into different directories and the characters after the full stop is used to indicate what the filetype of the object is.

To overcome this difference, you have to swap over these two characters. For example, 'backgr/gif' instead of 'backgr.gif' and your Acorn software correctly swaps the characters when the file is uploaded onto your Web space.

Please note that you only do this for filenames on your disc and not the ones mentioned in your actual Web page. Also, as we are effectively limited to ten letters in filenames on the Filer, I tend to keep my files to the following format – 'abcdef/ghi'.

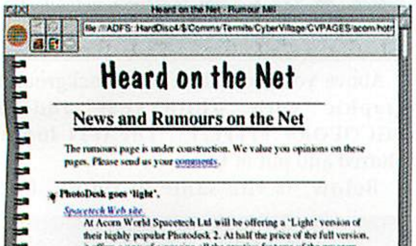
Names of files and directories on a Web Server can be virtually any length and are case sensitive. This can cause a headache for your viewers who would then have to remember not just your Web address but the lettercase of the URL. My advice is to leave them all lowercase.

A very popular trick with background images is to make them into very long horizontal stripes so that the left hand edge of the image builds downwards into a repeating pattern (I make the stripes at least 1024 pixels wide so that people using high resolution screen modes don't see the pattern repeating down the right hand side of the page as well).

If you look at my web site page at <http://www.cybervillage.co.uk/acorn/hotnet/> this effect is used to build a ring-binder effect running down the edge.

Using this effect you may find that the text spills into the left hand margin. One easy way to prevent this is by the use of the <UL> tag:

```
<UL>
text....
text...
</UL>
```



which quite neatly forces the browser to indent the text to the right.

Another good tip about background GIF images is not to make it interlaced. Most, if not all, browsers won't display the image until all of it is completely downloaded. Making a GIF interlaced does increase its size slightly so switching this option off saves Web space and also reduces the time taken for it to download.

Image tags

Placing images in a Web page is very simple and is done by using the <IMG> tag.

```
<IMG SRC="mepic.gif" ALT="Picture of me!">
```

is the most basic of uses and this tag simply places it on the page. But the one big disadvantage of using this tag is that the web browser does not know what size the image is. It will probably wait at this point until it downloads the image and can calculate how to position it on the page before carrying on down the page.

This means a frustrating wait for the person viewing your page and they will probably curse you for all time.

Making a GIF interlaced does increase its size slightly so switching this option off saves Web space and also reduces the time taken for it to download

An easy way around this problem is to inform the browser of the size of the image. Do this by including the width and height parameters in the Image tag:

```
<IMG SRC="mepic.gif" WIDTH="30" HEIGHT="60" ALT="Picture of me!">
```

In this case the browser leaves a rectangular space 30 by 60 pixels in size. The browser can then carry on down the page rendering the text and other graphics and the viewer gets to see all the page before it's finished downloading.

Width and height extensions can also be used to stretch or shrink the image on the page. I sometimes use this to good effect by creating long horizontal lines to break up a page's content by creating a GIF only a few pixels in size and getting the browser to enlarge it to the size required. For example:

```
<IMG SRC="smpic.gif" WIDTH="800" HEIGHT="8">
```

This allows you to re-use the same graphic for different scales saving more space on disc. But you should note that some Acorn browsers do not allow scaling of images in this manner.

The Image tag can be used in a wide variety of ways and for the full use of this tag I'd recommend you take a look at <http://www.htmlhelp.com/reference/basics/> This is an excellent web site run by The Web Design Group which has every HTML tag listed in detail in a nice user friendly manner.

Image maps

The most common use of an <IMG> is as a static image on a page, but another useful option is to use the image like a map so that when the viewer clicks on different areas of the picture the browser will jump to other pages. This is a very powerful feature of Web pages and is relatively simple to accomplish – once you know how.

First you need to get hold of a PD program called *Imagen* by Justin Fletcher. This takes your image and allows you to add circles, rectangles, etc. to built up an 'image map' of the picture in order to mark off areas where you want the hot spots to be.

Imagen can be found at <http://users.essex.ac.uk/users/gerph/acorn/graphics.htm>

When you've done this, *Imagen* generates a 'map/map' text file (without going into technical details make sure you select the NCSA format first) which contains these coordinates as a list. Place this map next to your web page on your Web site.

You now modify the image tag to indicate that it is part of a map by placing the keyword ISMAP in the tag.

```
<IMG SRC="graphics/uk.gif" WIDTH="564" HEIGHT="61" ISMAP>
```

To associate the map list with the image you place a <A HREF> anchor tag around the img tag like so.

```
<A
HREF="http://www.yourhost.co.uk/cgi-bin/imagemap/yourpagename/map.map">
<IMG SRC="graphics/uk.gif"
WIDTH="564" HEIGHT="61" ISMAP>
</A>
```

The path in the above anchor will be unique for every Internet provider, but generally it consists of your Internet providers URL followed by '/cgi-bin/imagemap/ '. To be absolutely certain ask them to quote the URL to the imagemap program that is used to process the map list.

For more information on Image Maps a good place to look at is <http://www.hway.com/ihlp/> or for general web page construction links take a look at <http://www.cybervillage.co.uk/acorn/bootst.htm>.

You should now be over some of the basic hurdles of using graphics to create interesting effects in your Web pages. As with anything, you never stop learning – looking at other peoples Web pages HTML can teach you an awful lot.

See you online. AU

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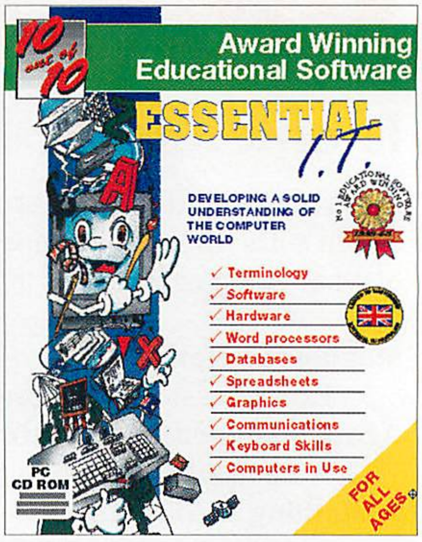
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Matthew Davies describes how plug-in compliant applications allow you to build the software package you want

The **ultimate** software tool

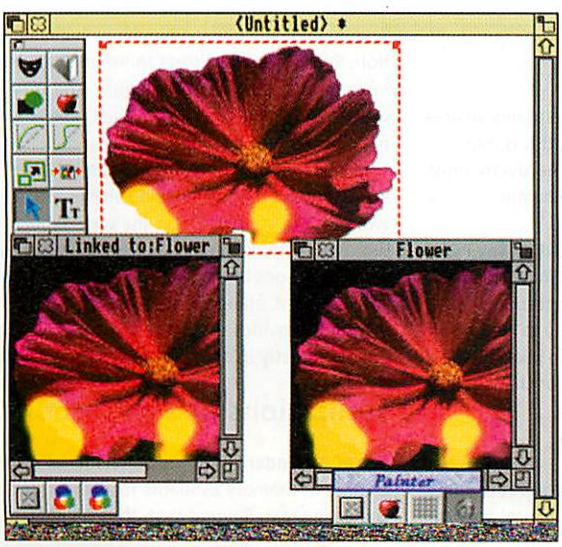
Don't you just hate it? You've just finished your latest masterpiece leaflet, brochure or newsletter and you notice there is a problem with one of the graphics – it's too dark. You need to make it lighter – but only that one graphic. What can you do? You could save the graphic in to one of the myriad of graphics packages available and process it there. Better still, use OLE to automatically pass the graphic to a graphics package.

The problem with both of these approaches is you need to have enough free memory for the graphics application and a copy of the graphic image. If memory is tight you have to save the graphic to disc, quit your DTP, load the graphics application, load and process the image, save it, reload your DTP and finally reload the image – what a performance.

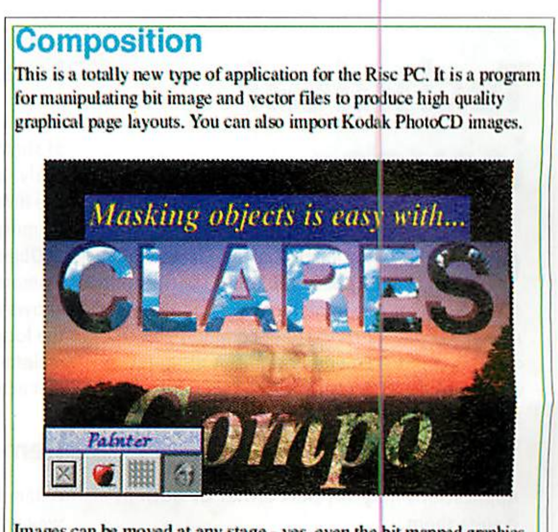
PCA to the rescue

Clares have come up with the PCA (Plug-in Compliant Application) specification that, when it's implemented, allows applications to share data without having to make a copy. In the previously mentioned scenario you would simply load a PCA tool. This can be a full blown application like Clares' *Composition* or a small 'applet' that performs a few specialised tasks. Let's call this Lighten for the sake of this exercise. The Lighten PCA tool announces itself so that when you open the Utilities menu on the DTP application, the Lighten PCA tool is listed in the menu structure. Click on this and a new window opens showing the image from the DTP's frame.

The image is not a copy of the original, it is the same image with a different window on it. You can edit this and the

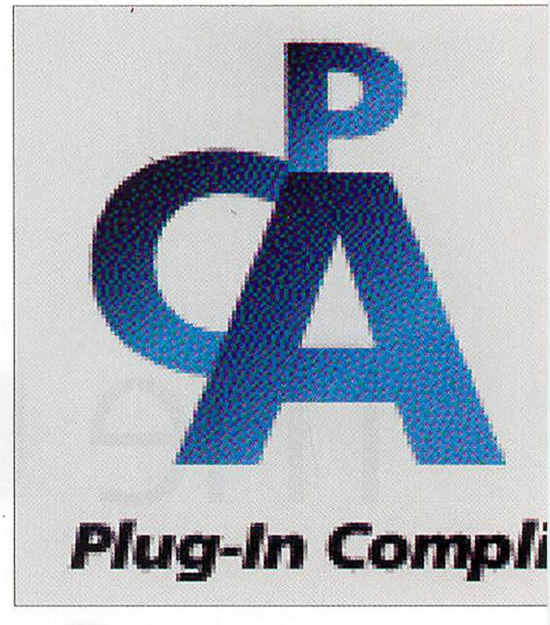


Here Composition has the flower image linked to Painter and Simple Paint. Editing in either is immediately reflected in all three images. Note that Composition also has a mask around the flower



An image in a DTP frame with the toolbar from a PCA tool providing In-place editing

The **ultimate** software tool



What applications support PCA?

At the time of writing the products that have been announced are:

- Composition and ProArtisan 24 from Clares
- Ovation Pro from Beebug
- DaVinci from Aspex
- TopModel from Sincronia

Although these applications have PCA support you may have to wait for a new release to get it. Contact your supplier for more information.

changes are reflected immediately in the DTP frame. So you could apply a lightening filter to make the image suitable for printing.

Putting it in its place

That's the basic idea of PCA but it gets better: instead of opening a new window onto the same image why not use the existing window? The specification allows for this and calls it *In-place* editing.

You would do exactly the same thing except no second window appears. Instead, Lighten's tool pane appears over the DTP frame. Select the tool and it is applied to the image in the frame.

It looks as though the DTP has gained a tool for lightening a graphic. Of course this could be any sort of tool, even a full blown painting package.

You now have the potential for adding all sorts of tools to your DTP application. The beauty is that any PCA application will work with any other PCA that is processing the same type of data.

So if you have a range of different graphics applications that are PCA compliant and someone writes a super new filtering PCA, all those packages can utilise the new filtering routines without making changes to the main application — which usually means adding bugs as well as features.

Those of you with sharp brains will have jumped ahead and be thinking about how this system could allow you to build your dream application. Let's stick with graphics, as this is what it is aimed at first. You could have a range of applets with one displaying a sprite and nothing else, one providing paint and draw tools, one providing filters, one providing saving in various formats, one doing printing, one doing warping and so on.

All you need to do is load the applets required and away you go. Once the standard applets such as displaying, saving, and printing are there they will not need to be written again. You've bought them so you can use them with applets from the same company or from any other company that provides PCA tools.

One obvious use of this technology that leaps out at me is the Network Computer when you get beyond just web browsing and e-mail. Being able to download applets that do just what you want will save a lot of time compared with downloading a large

Once the standard applets such as displaying, saving and printing are there they will not need to be written again. You've bought them so you can use them with applets from the same company or from any other company that provides PCA tools

Technical issues

Quoting from the Web site: The Clares Plug-In Compliant Application (PCA) specification provides an easy to implement way of allowing multiple applications to share common objects residing in shared memory areas. A program written to the PCA specification will work with any other which supports the standard and uses the same type of objects.

There are two sides to PCA support. Applications may support either or both as it suits them.

Local applications

A Local application creates and maintains an area of shared memory (on the Risc PC this is most likely to be a dynamic area, older hardware must use RMA or something like the Dynamite memory manager).

Objects in this area may be edited by any PCA 'Remote' application which is running, provided it knows about the type of object concerned. It is the local application's responsibility to create and maintain pointers to objects and to take the correct action when an object moves or changes size.

Remote applications

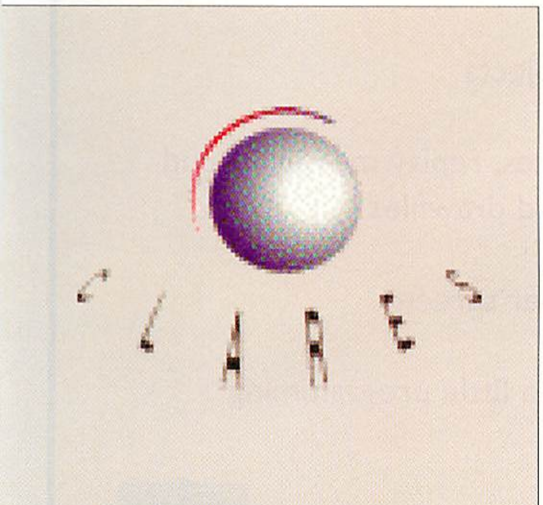
A Remote application modifies an object in some way when requested to do so by a Local application. Remote applications can be small applets or major programs in their own right. The PCA specification sets no limits on the changes which may be made to an object.

In practice, the two sides blur considerably. It is possible for more than one Remote task to work on the same object at the same time, in which case the Remote tasks must respond to some messages in a similar way to the Local task.

In addition, an optional extension to the standard provides support for in-place editing of objects directly in another application's window.

Limitations and philosophy

The PCA standard requires objects to be stored in an area of memory available to all tasks, such as Dynamic areas. Beyond that, the PCA is designed



nt Application

application that does far more than you want.

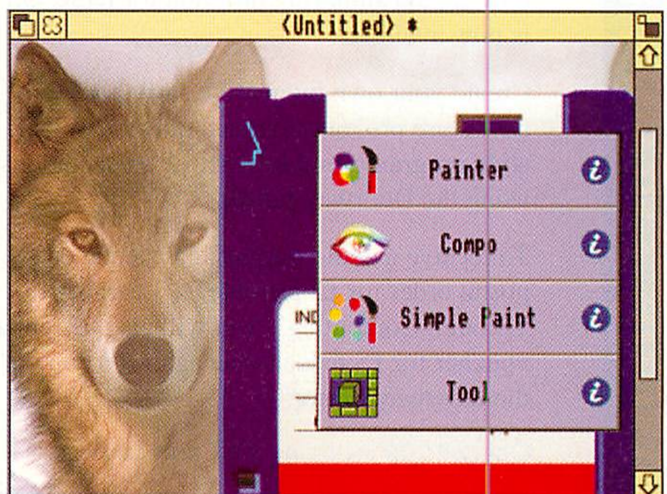
The history of PCA

PCA, or similar concepts, have been kicking around the computer world for quite a while but it has taken New Zealander Rob Davison – author of *Composition* – and Clares, to sit down and spell out exactly what needs to be done to put such a system in place.

The initial impetus was to reduce memory requirements when working with *Composition*. Initially the specification was going to deal with all data types but this started to become unwieldy and it was decided to concentrate on graphics for the first generation.

This has made the specification more approachable and several companies have already added PCA compatibility to their applications. This is in stark contrast to OpenDoc which is the Mac world's version of PCA — OpenDoc is much more comprehensive but requires the rendering code to be included in each document. The result is that very few application writers are supporting it, Apple have been trying to get it accepted for over two years.

Having specified PCA, Clares and Rob Davison put it out for comment to all comers. This lead to the specification being altered so that it was not specific to the Risc PC. The initial draft PCA specified the use of dynamic areas, which are only available on the Risc PC. The amended specification allows for alternatives such as Dynamite on pre-Risc PC machines, although to date no PCA's have been written for non Risc PC machines. AU



A list of PCA tools available to Composition

Licensing PCA

Clares are licensing PCA to those that wish to use it. For Public Domain applications it is free and always will be. For commercial use it is currently free for five years but Clares are reserving the right to make a charge after that.

Dave Clare of Clares told me "The management time required to administer and maintain the specification is quite an overhead but we really do want to make this an open system so we are absorbing the cost.

However, it is conceivable that the time required could become a burden and require dedicated staff, particularly when the standard is extended to other data types." Dave also told me that ART are keen to promote PCA and discussions are under way for ART to adopt PCA as part of the OS/Style Guide.

to be as transparent as possible to the memory management system used by a program.

Objects are either entirely paged into RAM during any PCA exchange, or a virtual memory system which is transparent to the program accessing memory is used, such as !Virtualise.

Objects are stored in a cross-program standard format for which there is a method of rendering readily available to other programmers. Examples are RISC OS Sprites, Drawfiles, ArtWorks files, Plain text and so on.

If you are writing or have written a program which produces data objects that may be desirable for other programs to render, you should consider providing a rendering module (or some code) which other applications can use to display your object types. Also consider placing the details (if not the rendering code itself) in the public domain. No well-written RISC OS application is an island. By supporting the PCA standard, programs can take advantage of each other's good features and minimise their weaknesses while providing the user with a far richer and more productive working environment.

That all sounds pretty good to me. If you want to know more then go to Clares Web site and take a look at the PCA page:

`http://www.stcoll.ac.uk/clares/support/pca.html`

Sample programs

One tip to save your phone bill is to immediately go to the Acorn User cover disc and, if you have a Risc PC, try out the programs. The directory also contains the PCA specification, graphics and sample applications in C and Basic. There are some simple suggestions of how to use the supplied applications.

While these applications are very simple they do illustrate the ideas behind PCA and make it much easier to understand. I would recommend you take a look at them, although Clares do say that they are rough and ready applications and you should not necessarily take them as being the definitive route to PCA.

As well as the PCA archive Clares also have demo versions of Composition and ProArtisan 24 that are PCA aware. You can use these together and in conjunction with the applications from the PCA archive.

All the demos are Risc PC only.

Not invented here

David Matthewman investigates how the NetStation may cope in a world which has barely heard of Acorn

In the evolving world of the Web, compatibility is a key survival tactic. Technologies and software that only work with certain systems are heavily selected against, and no one company or interest sets the standards. To survive in this world, the NetStation is going to have to work with enough of it that users don't feel they're being 'cut off' from the best.

Of course, much of what is on the Web already works on the NetStation. The browser will display the building blocks of the Web – HTML – to a reasonable standard, handling tables, client-side image maps and even, apparently, frames. However, the Web is much more now than simply HTML. Although the browser copes easily with universal standards such as animated GIFs, other elements like plug-ins, Java and ActiveX are all jostling for supremacy as the next Big Idea on the Net. How ready is the NetStation to cope with these?

Java

Java is a programming language developed by Sun Microsystems. It is similar to C++ – simpler in many areas, more complex in a few others – and on this basis getting a version running under RISC OS would not be difficult. However, to view Java as 'just another programming language' is to miss some of its key features which makes it so attractive for use on the Internet.

Java programs are not written to be compiled into machine code, as is the case with almost every other language. Java programs compile into *bytecode*, a compact sequence of instructions that resembles machine code, but which isn't specific to any particular processor. The bytecode is itself run by a piece of software called a *Java Virtual Machine*, which insulates it from the processor and operating system that it's running on.

A Java program will generate the same bytecode no matter what system it is to be run on. The difference is in the Java Virtual Machine, which must be implemented for each operating system. The Virtual Machine presents an identical interface to the bytecode in each case – an interface that Sun has precisely defined – and does all the hard work of turning the bytecode into something that the parent machine can understand. When it ships, the NetStation will have a Java Virtual Machine built in, and so will be able to run Java programs with no problem.

You may be wondering how Java manages the elements of a WIMP architecture (Windows, Icons, Menus, Pointer) when it has to run on so many different operating systems. The honest answer is: 'badly'. Its GUI library is limited and hard to get to grips with – it certainly couldn't cope with anything as complex as a database or spreadsheet without looking appallingly primitive. It's possible to get round this by adding to the libraries available, but only at the expense of portability.

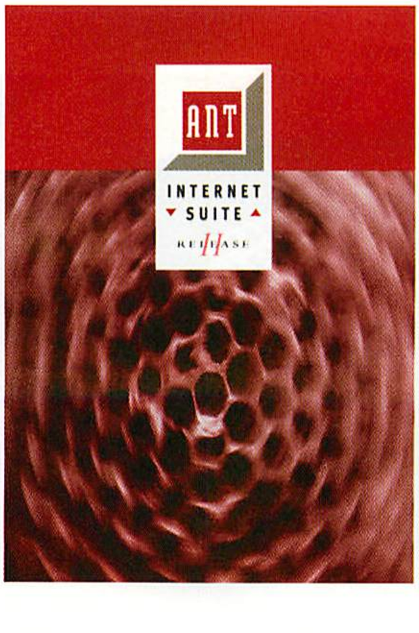
It will soon be possible, for instance, to write a passable Windows application using Microsoft's *J++* development system, but there's no way that it would run on anything other than Windows. For this reason, the sort of Java software – 'applets' – that you will meet on the Internet will almost certainly continue to use just the standard libraries; the benefits of being able to run *the same* code on all Java-enabled operating systems is simply too great.

JavaScript

Netscape, who knew a bandwagon when it saw one, decided to christen its embedded scripting language 'JavaScript'. JavaScript and Java are both object-oriented programming languages with a similar syntax, and so look superficially the same, but they aren't and they need different interpreters. The NetStation won't run JavaScript, even though it will run Java.

This isn't a disaster. For a start, JavaScript would be easy to implement in the future, even if it's not in the NetStation that's on sale in January. Also, JavaScript isn't an Internet standard in the way Java itself is. Finally, most pages I've seen seem to use JavaScript for writing a scrolling advertising message in the browser's status window, and failure to do this would be one of the best arguments in favour of using a NetStation, in my opinion.

Can ANT deliver for NetStation?



Plug-ins

Plug-ins have been a key feature of the Web for roughly a year now. The idea behind them is simple; if the browser encounters a file which it doesn't know how to display, it calls upon a plug-in to display the file for it. This has allowed video, audio, EPS, 3D modelling and a host of other formats to appear on the Web.

Because this technology has been more or less unavailable to Acorn users, there's been a tendency among us to dismiss it as pointless clutter. This simply isn't true. Used well, these things can add greatly to the content of the Web, and the NetStation will suffer if it can't use some of the key ones.

Thankfully this shouldn't be the case. The NetStation will be able to display Macromedia's *Director* movies without any additional software – and possibly *RealAudio* compressed sound files – which bodes well for other formats. Plug-ins aren't intrinsically hard to write. The interface between a plug-in and a browser is reasonably simple – the awkward part is taking a plug-in written for, say, Windows and re-writing it for the very different RISC OS display system.

ActiveX

If you've had anything to do with the Web recently, you will have heard of ActiveX, although you may not be sure exactly what it is. It's been hailed as everything from a better version of Java to a way of imposing Microsoft's operating system onto the Web. In fact, it's nothing but a very clever re-purposing of existing technology.

Microsoft's recent operating systems (Windows 95 and NT) support Object Linking and Embedding (OLE) extensively. The idea is that data from application A can be embedded into a

Not invented **here**

document belonging to application B, without the application B needing to know how to display, print or edit the data. Application A provides a module – known as an OLE control – which will handle all requests from application B to deal with the data, and there's a standard interface between the applications.

If this sound familiar, it's because this is exactly how plug-ins work on the Web. Microsoft decided that OLE didn't sound dynamic enough for the Internet (except maybe in Spain) and re-named it ActiveX.

The interface between an ActiveX control and the browser is not only more sophisticated than a plug-in's, but also is more closely tied to how the Windows operating system behaves. This is a problem for the NetStation; it would be relatively easy to re-write a plug-in to work on a different architecture, but much harder to do the same for an ActiveX control. The problem is not just coping with the totally different display routines, but with making the complex communication between the ActiveX control and the browser as portable as possible.

Microsoft claims not to think it's impossible. It has third parties developing ActiveX implementations for the Mac and for UNIX, though I'll believe them when I see them. It may therefore be possible that ActiveX could be ported to the Acorn, although it would be likely to need some major changes to the browser to accommodate it.

'But,' I hear you object 'I thought that ActiveX controls could be written in Java. Won't they then be portable?'

ActiveX controls can indeed be written in Java, and indeed certain aspects of the Java language make it ideal for writing them. However, they can't be written in *portable*, 'runs-on-everything' Java, because they will rely on some Microsoft-specific Java libraries which (surprise, surprise) are currently tied to Windows. Until such a time as the Java Virtual Machine on the NetStation has ActiveX libraries built in (which is by no means inconceivable in the future), Java ActiveX controls won't work on it.

Size considerations

One large hurdle that the NetStation will have to overcome is the lack of local storage. The machine has 4Mb of ROM, some amount of RAM, and that's it. Everything not in ROM has to be downloaded over a network when the machine is turned on. That's fine for HTML, because Web designers already strive to make their sites as small as possible. The same goes for Java. Java bytecode is moderately compact, and because the Virtual Machine does the bulk of the work, most Java applets on the Web are small.

It's not the same with plug-ins and

One large hurdle that the NetStation will have to overcome is the lack of storage. The machine has 4Mb of ROM, some amount of RAM, and that's it

ActiveX controls. Most Web plug-ins are fairly large, because on existing set-ups they are usually downloaded once and left on the hard drive. Not so with the NetStation; if it isn't in ROM you'll have to download it each time you start up the machine.

This will certainly be a problem. Although RISC OS code is traditionally more compact than equivalent code on other machines, plug-in developers are going to have to discipline themselves to write much more compact code than they currently do. Set alongside the existing problem of porting their plug-ins to ARM code, this may well prove the biggest barrier to plug-ins on the NetStation.

Does it matter?

So – Java will work, JavaScript might eventually, plug-ins are unlikely, and ActiveX (and, for that matter VBScript) is probably out of the question. How can this machine compete?

Firstly, it's never going to displace PCs, but then it's not meant to. The NetStation is opening up a whole new market, and it's likely to be a big one. The Web has one fundamental difference from traditional software arenas – the software that gets used most depends less on where the large corporations spend their advertising budgets, and more on what the Web designers feel is worth putting on their sites.

A feature could be backed by the full might of Bill Gates and all his little Microsofties, but if it is only viewable by Windows 95 machines, it won't see much use on the Web. For every Web site that proudly announces 'This site needs *Netscape Navigator 3.0* and if you haven't got it you can go elsewhere' there are ten that (more quietly) make sure that if someone's visiting the site with a text-only browser, they'll still feel welcome. The NetStation may not be able to unleash the full power of the Web, but if it delivers the core features well enough that won't matter. The onus is on the Web site to be compatible with as many browsers as possible – it's that sort of market.

Remember that the NetStation has plenty to offer that traditional PCs can't match. It's inexpensive, easy to set up, has no hard drive to go wrong, has Acorn's unique smart card system and an anti-aliased display which looks stunning on a high-resolution monitor and makes Web browsing *possible* on a TV. Plenty of people would sacrifice ActiveX for these, and quite rightly too.

In the evolving world of the Web, the NetStation is fitter for survival than you might think.

Can the Acorn NetStation compete in the future of the Web?



A 'C'

In three bite-sized lessons, Matthew Bloch shows how easy it is to assemble an arcade game of professional quality

Most people think there is some indistinguishable difference between commercial and freeware games; all it takes is a little planning – you don't need a huge amount of time.

I can't show you how to program something as technically complex as *Quake*, since the techniques used in 3D 'walkabout' games are far too complicated to cover here. If we limit ourselves to flat, 2D games, we can still come up with something pretty playable and professional looking. So let's do *Space Invaders* as an example, just to show you how quick it is to write. In an inspired moment, I decided to call it *Hive*.

What you'll need

In order to write this, I'll be developing a game library of useful routines. The library will be written in C, with some parts hand-coded for speed, though you can use the libraries without needing to know what they do. You *will* need a C compiler, preferably the Acorn C/C++ suite, and a copy of the freeware DeskLib library (available from HENSA, ftp://mic2.hensa.ac.uk/micros/arch/riscos/a/a129, or dial 01524 843878 and download it this way).

I can already hear some shouts and curses from BASIC programmers on a budget, but C is a language very well suited to writing games, and you'll find the development time is drastically reduced. Also C runs more quickly than BASIC, being precompiled.

The other shouts I can hear are from the die-hard ARM code fanatics, those who wouldn't touch a high-level language with a very long barge pole.

Yes, you can squeeze some more speed out of the ARM by hand-crafting every instruction, but for *Space Invaders*, it just isn't worth it. One caveat with hand-coding a game is that you can get stuck sometimes trying to organise code, and I've seen hand-written code that comes out considerably slower than the compiled equivalent.



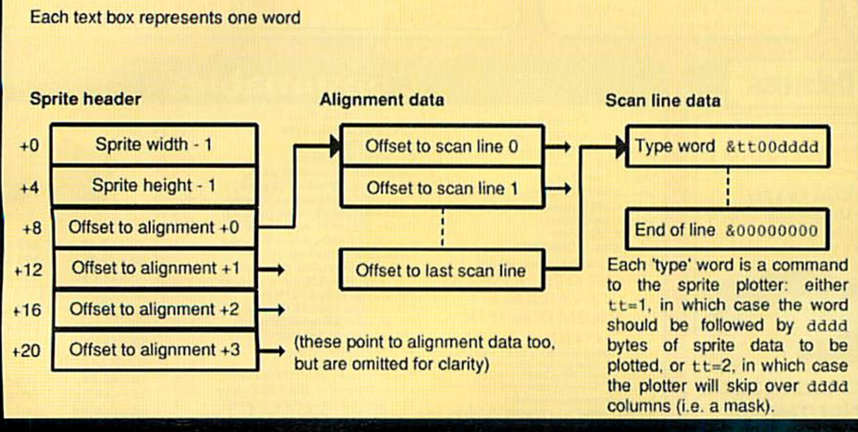
Animation principles

I originally spent a good hour painstakingly writing down *everything I could* think about computer animation, but thought that if I couldn't assume this knowledge I'd never get anywhere in three articles. So, I'm assuming the reader will know about the techniques of bank swapping (**OS_Byte 112/113**) and waiting for the monitor scan-line to reach the bottom of the screen (**OS_Byte 19**) before doing so.

In brief, computer animation is achieved by keeping two copies of the screen memory, and while one copy is being displayed, we can scribble over the other without worrying about whether users will see a half-drawn screen. Then, when the monitor scan-line reaches the bottom of the screen, we can swap the banks over so that our freshly drawn one is displayed instantly, and get on with drawing the next frame.

Speed compensation is a good place to start: one problem a lot of older games had running on Risc PCs is that they timed themselves off the monitor's refresh rate, which used to be stuck at 50Hz on old machines. Nowadays, monitors can go at between about 30-120Hz, and games can get into severe trouble if they time their animation off the screen refresh rate. This also causes problems if the processor is too slow, in that the game might rely on

Figure 1: Popcorn 'fast' sprite file format



breeze

part 1

redrawing one 'game' frame for every frame update by the monitor. To avoid all these complications, we need to write animation code that will run on any monitor and processor combination and still go at the same speed.

The way to do this is first, to set an animation rate; let's choose 50Hz. Now, if we split our animation loop into two stages: plotting and moving, it's the plotting that takes time and will slow down more than anything. Here I'll give way to some code to illustrate how to do it:

```
SWI(0, 1, SWI_OS_ReadMonotonicTime,
&start_time);
 while (!finished)
 {
   plot_screen();
   SWI(1, 0, SWI_OS_Byte, 19); /*
Wait for vsync */
   Popcorn_SwapBanks(); /* Explained
in a moment... */

   do
   {
     SWI(0, 1, SW _ReadMonotonicTime,
&end_time);
     frames_passed = (end_time -
start_time) / 2;
   } while (frames_passed == 0);

   SWI(0, 1, SWI_OS_ReadMonotonic-
Time, &start_time);
   for (; frames != 0; frames—)
     move_objects(); /* (by one game
frame */
 }
```

You can see that no matter how long the plotting takes, the movement bit will compensate adequately. Also, note the way we have to wait for at least one frame to have passed before passing to the movement stage, otherwise we risk not moving the objects at all if the processor is too fast. If you take out the divide by two in the **frames_passed** calculation, you can animate at 100Hz.

This code is how the *Spotlights* demo on the cover disc works. You must be wondering about that strange **Popcorn_** call by now; it is the name of the library I'll be developing. To use the bank swapping facilities:

- Change to any 256-colour mode; *Popcorn* isn't designed to work in anything else, and most Archimedes games run in 256 colours.
- Call **Popcorn_ReadScreenDetails();** which will do the necessary initialisation, and let you start drawing on the reserve screen bank.
- Call **Popcorn_SwapBanks();** when you have finished drawing on the reserve screen bank to display what you've drawn instantly.

The sources for *Popcorn* and the *Spotlights* program are on the cover disc, fully commented.

Plotting sprites and blasting pixels

If our game is going to keep a decent animation rate, we need to optimise the **plot_objects();** part as much as possible. Most games' screen redraw routines hinge on sprite plotting, so this would be the best place to start. The OS does provide the OS_SpriteOp, but these are *far* too slow, simply because they are very flexible, and can be used in any screen mode.

Introducing **Popcorn_PlotSprite;** this is a fast sprite plotter which works in any 256-colour screen mode. It takes three parameters – the address of the sprite data, and the x,y co-ordinates to plot at. Since the screen memory is stored from left to right, top to bottom, our co-ordinate system is going to have (0,0) at the top-left, with positive being towards the right and bottom of the screen. Unlike the operating system co-ordinate system which works from the bottom left, this is entirely logical from a programmer's point of view.

The sprite data has to be converted to a special format, for which all memory considerations have been sacrificed to squeeze the most speed out of the ARM chip. The file format is documented in figure 1; each scan-line (row of pixels) is stored four times in each of the four possible word-alignment positions. Then, each scan-line of each alignment is indexed so that if we need to clip off the top or bottom, the

A 'C' breeze

part 1

plotter can just jump to a particular line.

The diagram should make this arrangement clear. So, each scan-line is stored as a list of words, denoting either a run of pixels to plot, or a run of pixels to skip (that is to say, part of the mask). Following a 'plot' command, the pixels to be copied to the screen are stored in the correct alignment, so no shifting is necessary. After all, this is the point of storing four copies of the image. Then the plotter can pick up the leading bytes with LDRB and STRB, and subsequently plot the sprite in larger chunks with LDR/STR and LDM/STM.

The way this is done is interesting; rather than using a loop, we test each bit in turn and plot 4, then 8, then 16 pixels as necessary. Here's the extract from the code; R9 is the number of bytes to be plotted, R11 points to the part of the screen memory we are plotting to, R12 points to the word-aligned sprite data, and R0-R7 are used as scratch registers to load to and store from:

```
TST    R9,#2_100 ; (4 pixels)
BEQ    no_bit_2
LDR    R0,[R12],#4
STR    R0,[R12],#4
BICS   R0,R9,#2_111
BEQ    no_bit_8 ; i.e. skip to end
no_bit_2
 ... and so on until ...
TST    R9,#2_1000000 ; (32 pixels)
BEQ    no_bit_7
LDMIA  R12!,{R0-R7}
STMIA  R11!,{R0-R7}
LDMIA  R12!,{R0-R7}
STMIA  R11!,{R0-R7}
no_bit_7
```



As you can see, using this technique, we don't need to bother with loops when plotting. The difficult part with this plotter, since we can skip whole rows easily, is to implement x clipping. What needs doing is to check for each run of pixels to plot (where *tt=1*) whether the run is fully on-screen, fully off-screen or partially on. Then make two checks, one for the left-hand side of the plot window and one for the right.

Throughout most of the plot routine, R12 is the address of the current part of the scan-line we're plotting, R11 is the screen address to copy bytes to, and R10 points to the next scan-line to plot, and this is read from the alignment data (see diagram in *Figure 1*). A separate count is kept of the number of lines left to plot, since there is *no terminator* assumed on each copy of the alignment data.

Other than these tricks, the plotter works as you might expect: it follows each scan-line along until it hits the end, and leaves out those that are outside the top and bottom of the clipping window. Clipping isn't limited to the edges of the screen; you can alter the co-ordinates of the plot window by changing the values of **plot_window** (a global variable) with statements like **plot_window.x0 = 100;** or similar. Don't forget though, that x0 and y0 are the minimum co-ordinates, and therefore in the *top-left* of the window, unlike the operating system **VDU 29** calls.

Object handling

If you look at the *Spotlights* demo, you'll find a primitive system of *object handling*. The circles are our 'objects' for this demo, and their details are stored in several fixed-size arrays containing the circles' position, velocities and size. On each frame, the program goes through the array, and moves all the circles on after plotting them. For the purposes of a demo, this system is fine.

However, for a game, the objects are going to be more complicated. Spaceship object controlled by the player, some alien objects controlled by the computer, and some missile objects for the player to launch, among others, will be needed.

There is the complication of collision detection, and which objects to check against which others. What we need is a system which will store lists of objects and process them in a semi-automated way for us.

At the very least, this will entail moving the object around according to its velocity. Here are some other features to include:

- The address at which an object's plotting details are stored (i.e. so a sprite can be attached to each object).
- Handler functions which deal with each object individually when the automated object processing can't (i.e. when the object needs 'attention').
- Windows outside which objects should be automatically deleted or call the handler.
- An optional timer on each object; when it runs down, the object can request attention or be deleted.
- A flag word to control the various processing options.

I'll leave these as specifications for the moment, and give you the code next month. Suffice it to say we'll be able to progress very quickly with the object handling code. AU

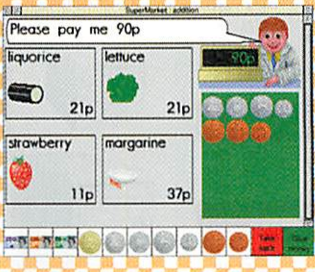




Shopping by computer

One activity that all children seem to love is going to the shop and it's even more fun if they can actually spend the money. Unfortunately, as so many people seem to be in a constant rush, 3-year-olds handling money is not always possible. Just imagine the tuts from the supermarket queue on a Saturday morning as the little ones try to pay the cashier.

While on my travels, I came across a program that is not quite as good as shopping, but is certainly the next best thing. *Supermarket* from Resource is a two-disc program which gives small children ample exercise in paying for goods in a supermarket. At £39.50 it may seem expensive but this software has been very carefully thought out to give children practice in counting out the correct money, adding/multiplying different items to get a total and getting change.



The program will run in 1Mb, although if you want to use the speech, you'll need at least 2Mb. Other features include altering the level of difficulty and recording each child's results so you can easily identify any problems.

Resource may be contacted on (01509) 672222.

Supermarket gives young children the opportunity to practise spending your money

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New Wave of programming tools

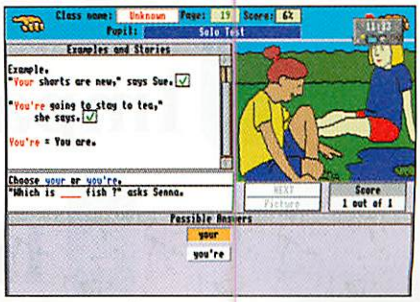
New Wave Concepts (a new software house specialising in software for Acorn and PC) has just released two programs aimed at computing and electronics courses at 'A' Level and beyond. *MicroTutor* is designed as an introduction to learning about the fundamentals of computer science. Based around a visual approach, it enables students to use either Z80, 6502, 68000 or 8086 to investigate a variety of different concepts. *68kEm* is a more advanced tool providing a complete educational, development and simulation environment for the Motorola 68000 microprocessor. *MicroTutor* costs £60 and *68kEm* is £180. Both prices exclude VAT and are for single machines but network versions are available.

New Wave Concepts may be contacted on (01638) 660222.

Help is at hand

Helping Hand provides a variety of resources including five computer packs which concentrate on English grammar. The software packs, which are in graded levels, can be used for individual weekly sessions by children from Year 3 to Year 6. I looked at the Level B pack which contains examples, followed by a test on 30 areas which cause problems. *Your* and *You're* is the example shown. After the initial explanation, 20 questions follow which require the user to select which of the two words are missing from the sentence. The graphics and the display are adequate, although not stunning, which is a shame because this could be a really super program. From my experience in secondary education, there certainly is a place for software such as this.

Helping Hand is published by Chalksoft who may be contacted on (01775) 769518 or fax (01775) 762618



The graphics are simple, but attractive. Exercises are of the multiple choice type.

CSH hit back

It's been a long time since top Acorn software company Cambridgeshire Software House has been featured in these pages. After losing its Acorn education dealership status in the controversial Acorn shake-up, CSH has abandoned retailing hardware and returned to its roots as one of the top Acorn educational software producers.

In so doing, it has had to trim its operation – Graham MacIntosh has gone to Longman and CSH has moved to smaller premises. By the time you read this, it should have published its first major product since *The World of Robert Burns* which, incidentally, is still a top seller and scooping awards. Best of luck to all!

Contacting me

You can contact the Education page by writing to me, Geoff Preston at Acorn User, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP or by e-mail to: aueduc@idg.co.uk

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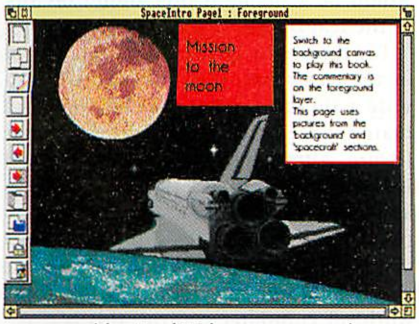
Colin Rouse explores the world of publishing with BookMaker

BookMaker from Resource is a software package that brings desktop publishing to all. It is a powerful tool for children at Key Stage 2. It is easy to use and helps unravel the mysteries of desktop publishing to this age group, inspiring them to produce some excellent work.

An overview

BookMaker allows children to make storybooks, strip cartoons, greetings cards, reports of projects, pamphlets, items for wall displays and many other things. Within the program, children can use pictures, either sprites or drawfiles, or scanned or digitised images from any source. These can be dragged from the full library provided and dropped on to the page where they can be repositioned, resized and re-orientated. They can be viewed in thumbnail size for easy selection before a choice is made.

Text can also be added at the click of a button and placed anywhere on the page. This can be done in any size, font and colour and shown as text, a thought/speech bubble, in a column or in any sized frame. The finished product can be in the form of an electronic book – for which a 'reader' is provided so that the program does not have to be loaded to see it – an automatic carousel of pages or as a traditional printed book.



In space with a *BookMaker* resource pack

Options

Although containing some quite complex operations, *BookMaker* is easy to use. The options available are all shown on a toolbar at the side of the page. These include:

- The canvas swap tool which alternates between the background and foreground for editing purposes
- The text tool for creating and editing text boxes, moving, resizing, copying, deleting, moving boxes forward and back and changing text styles, colours and so on.

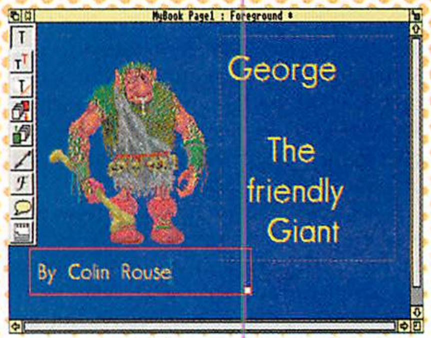
A useful option here is the ability to display a word list to aid children's vocabulary and spelling. There is also a facility to create and edit wordlists as appropriate.

The picture toolbar allows picture editing with options such as moving and resizing, copying, deleting, moving to another canvas, viewing the library and transforming. The page option offers copying pages, wiping the contents, deletion, go to page, insert, save or print. Options also allow for text and graphics manipulation.

All the toolbar options are fully configurable so that pupils can be given access only to the facilities the teacher wants them to use. This allows the teacher to disable any of the icons to help pupils concentrate on particular aspects of book making or the development of specific IT skills such as text manipulation or the import of sprites.

Picture Packs

Resource have also produced support packs for its software. Each includes graphics, backgrounds, people and objects. Packs are also available which contain all the above plus appropriate wordlists, example books, more backgrounds and extra pictures. Titles range from Christmas Tales, Fairy Tales and Farm Tales to Jurassic Parts and Space Trek. There are 10, although more are planned.



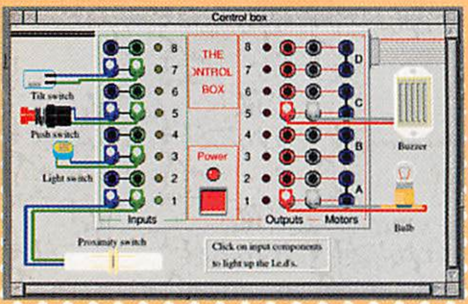
Adding text when creating a page

In conclusion

I have found *BookMaker* a comprehensive introduction to desktop publishing for the Key Stage 2 child. Although it is a powerful piece of software, its ease of use means that a whole new world is opened up in the primary classroom for book publishing and the associated skills, such as the idea of audience and purpose. The use of a toolbar, although not unique, means that children of all abilities can soon use it effectively. As a piece of content-free software, its place in my classroom is guaranteed. AU

Product details

Product: BookMaker
Supplier: Resource
Telephone: (01509) 672222
Fax: (01509) 672267
E-mail: info@resourcekt.co.uk
Price: £49.95 (single user), site licence prices available on request. Resource packs are priced between £15 and £25



Geoff Preston looks at a control simulation from Camboard which, although aimed at schools, is an excellent introduction for use at home

No wires please

Like Camboard's previous software – see reviews in *Acorn User* November 1995 and August 1996 – their latest offering, *Simple Control*, is a multimedia presentation. It takes the form of a tutorial which students work through, reading the text, clicking on the switches and answering questions along the way.

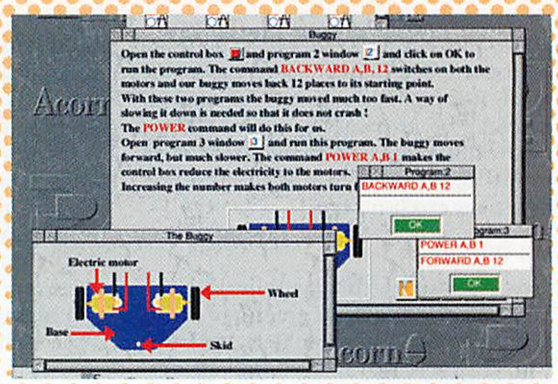
The disc contains four applications and a selection of worksheets as *Draw*files. The manual is provided as a text file which may be dropped into a DTP or word processor to produce hard copy. Not my favourite method, but it does keep the cost down.

ComCon (Computer Control)

The principal program in this suite introduces the control box. It includes various switches to press and demonstrates the concept of input and output. The user is given some paragraphs to read followed by exercises to carry out. A couple of questions are then asked based on the previous task. The answers and any other input requested must be in capitals.

Buggy

This program simulates the control of a floor roaming buggy. The presentation begins with an explanation of the way the buggy is constructed and connected to the control box. *Buggy* also introduces the control language: a version of logo.



ConSim (Control Simulation)

This is a very useful application as it provides simulations for three well known everyday control applications:

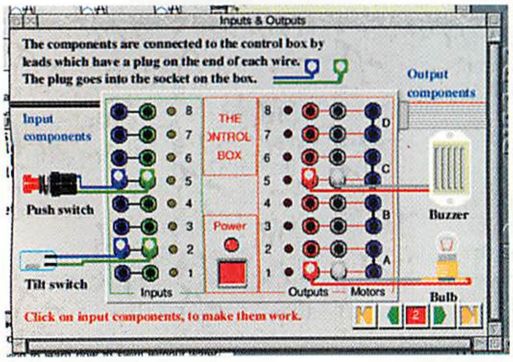
- An intruder alarm which features a variety of switch types to sense various parts of the house
- A night light featuring a light dependent resistor
- A set of traffic lights which clearly demonstrates the likelihood of a catastrophe if the control program is written incorrectly – as is the case here.

DirCon (Direct Control)

This is aimed at Key Stage 1 and allows pupils to point and click on the inputs, outputs and control box windows. It includes different switch types and two different output devices.

Worksheets

I've been critical in the past of companies who produce good educational software, but don't provide everything required for immediate use. Camboard has taken on-board this comment and provided five worksheets in *Draw*file format which can be worked through with or without the software.



Conclusion

What pleases me most about this software is that all the criticisms levelled against Camboard's first offering have been addressed in this package – actually there were only three minor niggles. The graphics are better, the background is less eye-numbing and it's supplied with some quality backup material in the form of worksheets.

As self-help packages go, there's surely none better, but before running off to buy it, a few words of caution.

Learning about computer control without having the required hardware might be regarded as about as effective as learning to swim without water. Unlike Paul Stopes (see page 74), many teachers are neither competent nor confident in the use of control in a class of 20 to 30 pupils. For them, *Simple Control* might well be the answer, although it would be a shame if they didn't do any of the real thing.

For those who do use computer control in the classroom, this software will provide valuable additional background material for students to peruse at their leisure. Alternatively – and this is how I intend using it – tell your class in advance that a lesson on control is imminent and let them do some advanced study on the subject. For those at home who would like to dip their toes into the world of computer control, this is an excellent introduction. AU



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In control

At Saffron Walden County High School, Computer Control is now delivered to every student in Year 8 – Paul Scopes explains how it's done

One of the responsibilities I took on as head of department this summer was the delivery of Computer Control to Year 8 Technology Students. In the previous academic year Control had been introduced to Year 7 students so that they would be familiar with Electrical, Pneumatic, Mechanical and Hydraulic forms of control, how control systems work and basic principles.

My predecessor had decided to order two Lego Dacta control lab kits in order to cover computer control. As a school we had previously used Lego lines control systems with the BBC to good effect. The Lego Dacta control lab contains an interface, software, leads and various input and output devices as well as a wide range of Lego so that a number of models can be made up. The teachers' pack shows how this and the support materials can be used in the classroom to teach computer control.

The objectives

My first task was to decide upon a method of delivering computer control to all Year 8 students. Each group would be given a six week block at three hours a week, totalling 18 hours of computer control. In that time I wanted the students to understand the principles behind computer control and how to use a computer to monitor input devices and activate output devices. My ultimate aim was that they would be able to use the system to solve their own identified problems.

I decided to take the groups through a number of mini projects which would enable each student to understand the basics of programming and allow them to extend their understanding. Each task would be less structured which would allow students to apply knowledge gained through the module.

Mini-projects

I decided to set the whole module in context by using the school's farm unit. The farm contains a number of interesting examples of control systems and in the first lesson the group went there to look for them. These were recorded in terms of INPUT PROCESS OUTPUT. This investigation was then extended to the whole school.

Identified systems included greenhouse watering, windows, heat control, a wind generator (used to power the lighting in the poultry shed) and fire and burglar alarm systems. This led to the first task – the design and modelling of a greenhouse window which would open when the temperature inside is too hot and closes when the temperature is too cold.

The Lego Dacta Kit has a model for this but it was considered to be too complicated at this stage, so our own model was designed incorporating a heat, touch and light sensor and a motor as an output. The model was ready made so time would not be spent putting Lego together and the emphasis would be on the programming. The language Lego Dacta Control Lab uses is based on Logo and has a structured grammar; it is essential that spaces and full stops are in the correct places otherwise the procedure will not run.

Programming

To introduce the programming, the students first identified the process the model would go through and then wrote it out in English. They would then refer to a handbook which contained the procedure commands (alongside English explanations) but in the wrong order.

Their task would be to put these commands into the correct order with the correct syntax. Support material was available in the form of differentiated sheets which were partly completed. This now led to a major problem: How does a group of 25 students test their procedures on two interfaces?

Multimedia authoring

Over the last six months I have run a number of cross curricular pilot projects involving Genesis Professional – a multimedia authoring package – and the school was keen for this to be introduced across the whole curriculum. I decided to allow the students to record their design work for the Control module using this multimedia package.

At an early stage I needed to cover the basics of using Genesis and discuss with the students methods of planning and organising their time so that both the





report and the control activities would be completed on time.

Genesis was introduced in a one hour session during which creation of frames, entering text, images, graphics and linking pages were covered. This would form the basis of the students' report as well as taking still images with an Ion camera and embedding sound using a microphone, amp and Eagle Mark 11 board.

At the beginning of each lesson the students would generate a number of aims and would then work in pairs to meet them. For example, they would write the procedure to operate the greenhouse window model and wait until the interface was free to test this. In the meantime they could enter the Design and Specification and the flowchart into the Genesis report as well as taking images with the Ion Camera, digitising these or embedding sound clips.

Homework

One problem I have found when teaching students how to use new pieces of software is encouraging them to remember important steps so the software can be used independently in the future. To tackle this problem each student had to produce, over a two-week homework period, a user guide for Genesis which they could then refer to in the future.

This guide could be in the form of a booklet, poster, multimedia interactive guide or manual – the student's choice. A number of the best guides have now been passed on to members of staff so they can learn how to use Genesis.

The remaining controls tasks were to model a system for sorting apples from the school orchard. This involved programming a robotic arm which would eventually be put with the system to pick up apples and place them into the correct container, depending on colour.

A basic foundation

Every student participating in the module is entered for a NDTEF accreditation in control (a scheme in which the school is already involved). By using the resources effectively we have been able to provide each student with a basic foundation in computer control.

The students will use this next year as a resource, to solve open-ended control problems. They also have an understanding of how to create a multimedia application and the potential for such a device – this is already in evidence with students entering the National Educational Multimedia Awards.

Following its success, the school has extended the control module by purchasing another eight control kits. I now had to write a module for Year 9 which will apply the skills developed in Year 8. I wanted the students to have the opportunity to solve problems which they could identify themselves within a given context.

Town planning

I chose to look at towns and cities and opportunities for control within these and spoke with staff from the Geography department to gain some background knowledge. The students would be divided into groups and each group would be responsible for control within a particular part of the town. I wanted to incorporate the idea of a planning council which would discuss potential ideas and then reject or accept them depending on their merit. I contacted the local district council for advice on how this type of system actually operates.

In each group six areas would be represented – Residential, Commercial, Industrial, Emergency services, Travel and Transport and Utilities (pipes, street lights etc). Each group was given a brief and information on their role in the town. It was important that each group understood what factors would have a positive and negative effect on their area – for example, the effect of industrial pollution on residential areas.

To provide the students with a flavour of how a town develops, a scenario was created using SimCity. The students then had to develop a town while recording the positive and negative effects of their decisions.

To add a bit of excitement to the lessons a points system was implemented. Points were allocated depending on the ideas which were accepted by the group, how the ideas affected others, how well the ideas were developed and whether they were able to encourage other groups to develop solutions which would be of benefit to them.

This process gave the students the freedom to develop their own ideas and use control to solve exciting and interesting problems. Solutions such as automatic public transport, security systems, control car parking, environmental monitoring and traffic flow systems were modelled. In order to provide a life-like environment, my Resistive Materials technician is currently constructing a scale model of a city centre. AU





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GAME SHOW

Steve Mumford keeps you up-to-date with the Acorn games scene

I'm pleased to be able to offer you the third instalment of Paul Taylor's game diary, following the progress of his *Moonquake* sequel that looks set to provide fans of the original with heaps more gameplay. Without further ado, I'll hand you over to the man with more explosions than he knows what to do with.

Rumble rumble

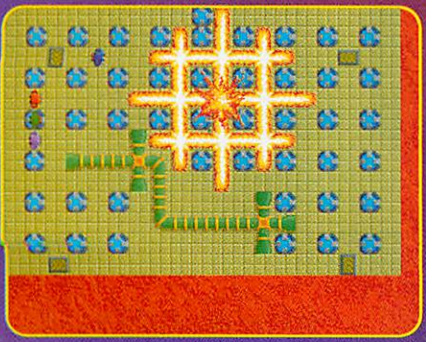
The last things I mentioned were the larger explosions I hoped to implement. Just to add a little graphical garnish, I've overlayed a bigger explosion animation in the centre of each burst. These sprites are nine times larger than the bombs or the player sprites, and so far they're the only ones that can pass off the sides of the screen, requiring a little extra code.

Overlaying something as large as these explosions is going to take up a little processing power, particularly when several are present on screen at once. However, I was surprised when the machine almost ground to a halt when I first persuaded it to display a group of these fireballs.

This is an ARM 6, I thought. Surely I can't have reached its limit already? The Sprite drawing routine can't be that bad, can it? Fortunately, it was neither, as a 'little' investigation revealed that each Sprite was being drawn 128 or 256 times each, due to a missing '!'.

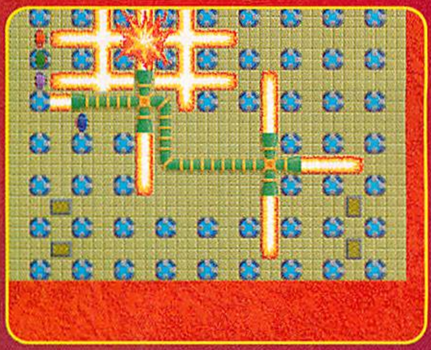
The large explosions look nice, but they don't actually add anything else to the gameplay, so let's move on to the pipe networks. The idea here is that a stream of fire entering the pipe network at any point will cause the tail of that explosion to appear at every other exit of the series of pipes. With this little device, you'll be able to catch your opponents out by sending an explosion through the pipes to leap out of an exit just in front of them.

The data for each entry point to the pipe network holds a coordinate giving the next entry point, forming a loop. When an explosion enters a pipe, the program follows this loop round, adding new fire streams to all the pipe exit points until it gets back round to the start. When coding this sort of idea, it helps if you get your x and y coordinates the right way round. In retrospect, it makes sense to me that the only pipe entry/exit point that worked at the outset was at coordinate (7,7).



A few different types of bomb will be available in the form of power-ups. The mega bomb is fairly straightforward, effectively giving you infinite-length explosions (bigger than the largest level, anyway) and will temporarily stun or flatten other players if pushed over them. The former aspect is complete, but the latter will have to wait until I deal with player deaths.

Another variety is the flower bomb – my interpretation of a request over the Internet



for different shaped explosions. As the arms of the explosion spread out, the program pushes out extra streams from these arms, two tiles from the epicentre of the detonation. I didn't realise how powerful this would be until I tried it – it covers quite a large area and because it stretches around corners, it's going to be a little trickier to hide from.

The flower bomb gave rise, perhaps inevitably, to the *flour* bomb. Every now and again, a bomb will detonate as a flour bomb, producing a large white dusty cloud. Any players caught in this will be covered in flour for a while pausing to cough from time to time as they move about – well they will when I get round to drawing the animations.

Now that we have several different types of bomb (a bouncing bomb will be included



later), I've added different sprites for each type, and an inflating/shaking animation to show their timers running down.

While I was adding all these explosions and bombs, I couldn't help thinking that there was still something fundamental missing – the blockages! The game's not quite the same without them – so cue hastily drawn blockage tiles and their respective detonations. There are four different blockage tiles at present, later I may try redrawing them to interlock better.

It was about time to add a front end to the game – later I should be able to add debug features to the menus to allow me to try different setups without recompiling the whole program. The menus are fairly simple – that is, once you have a reasonable text printing routine. The one I've put in allows me to place text on the screen either left-aligned, right-aligned or centred to a given coordinate, and highlighted if necessary.

I'm currently part way through adding the picking up and throwing of bombs. This is a little trickier than I anticipated because when the player picks up a bomb, it has to be removed from both the list of active bombs and the map data.

The graphical representation of the thrown bombs will take some experimenting with. *Marsquake*, as with *Moonquake*, has a top-down view rather than the forced 45 degree view in *Bomberman*. When you throw a bomb, it's going to have to come out of the screen towards you, which may be difficult to perceive, unless a shadow or something is added. I'll explain more next time round.





Secret tombs

Geoff Holland and the Generation Design team have released another budget title, named *The Pharoahs' Secret Tombs*. Their most recent products, *SeaTrek* and *The Last Cybermoch*, were designed to be arcade games and so perhaps suffered because of the level of playability and graphics quality the genre requires.

Secret Tombs is more of a puzzle game, but still retains an element of action. The storyline, if you hadn't already guessed from the title, casts you as a cross between a maverick archaeologist and a grave robber, and your somewhat politically incorrect aim is to grab as much gold as you can. That's the plot, and the game boils down to directing your character (which looks suspiciously like the submarine in *SeaTrek*) through a minefield of tombs, plundering those filled with treasure and avoiding the ones laden with traps.

Each level takes place on one screen, and play is restricted to a grid of squares in the centre. There are five gold-filled tombs on each level, and the player must navigate through the other pyramids to visit them. Here's where the puzzle element comes in, and it's the mainstay of the gameplay – instead of controlling your character with the standard four direction buttons, you must use icons dotted around the screen, each giving a sequence of movements such as *two up then one left*.

It's a question of piecing these together and plotting your route before you go; of course, this is made more difficult by the fact that you're racing against the clock. Variations are brought into the game in later levels, with objects ranging from death skulls to bonuses scrolling over the screen, for you to avoid or collect as appropriate.

The idea of the game is interesting, but for a program that takes over the whole machine it still leaves a bit to be desired. Combining the navigational gameplay with subgames, to be completed once you gain access to a tomb, would spice the game up. Alternatively, it would be nice to see a desktop version with a more relaxed timer. Still, it's good to see a programming team committed to their work and I hope they'll carry on improving. Generation Design can be contacted on (01258) 452507 or genden@argonet.co.uk.

Save those Gweeks

Nathan Atkinson has written in once again to supply some more passcodes to those in need – the game in question this month is none other than *Acorn User*'s own *Save the Gweeks*. Nathan told me that he came close to lobbing his Risc PC out of the window on several occasions. Anyway, here are the fruits of his labours:

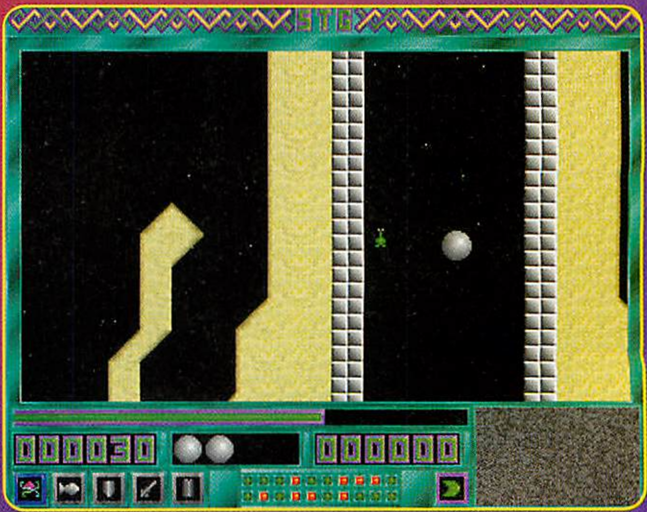
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APOCALYPSE NOW

After divulging this information, Nathan went on to ask the whereabouts of *Stryker's Run III* and *Proposal*. I can confirm that, although I don't yet have a release date for the latter, work's still in progress.

As for *Stryker's Run III*, I'm afraid I'm less certain – a lot of work has gone into the game and by all accounts it's nearly finished.

However, the programming team's circumstances have changed a little, and this has incurred a delay of sorts. Keep your eyes on these pages – I'll report back with more details.





Infocom gets a

Graham Nelson casts an eye over Activision's new CD of re-releases

Many stories are told about the now-legendary games company Infocom (1979-1989). Least reliable of all are rumours about its demise. The surviving founders deny it went bust, preferring to say it was bought up and then closed. At any rate, the nucleus of people did break up – some wanted to write 'grown-up' programs; all were casting about for new products. They never found one, and by 1989 the text adventure market was pronounced dead.

Activision Inc., tends to emerge as the villain in this story, but I think that's unfair: its buy-out was a rescue bid, but Infocom just went on losing money. Seven years on, it is getting a return on all that. It's ended up with the back catalogue to sell, which is a nostalgic sideline and the name to trade on. And with *Return to Zork* and *Zork, Nemesis* already written, and a third in the pipeline, this is big business. The new games are graphical adventures of the big-budget, point-and-click kind, and they're made like Hollywood films, to the extent that the person in charge is called the Director.

Both games have been modestly well-received, but (as one of the original *Zork* authors recently commented) are nothing much to do with 'real' *Zork*.

Now (mostly) available

Infocom published 31 textual games, and four more with added graphics. All but two are on Activision's new CD, *Classic Text Adventure Masterpieces of Infocom*. You have to admire this kind of longevity; not many programs compiled on October 21, 1982 (like *Infidel*) are still in the High Street.

The two missing games are, presumably, both left off for copyright reasons – *Shogun* and

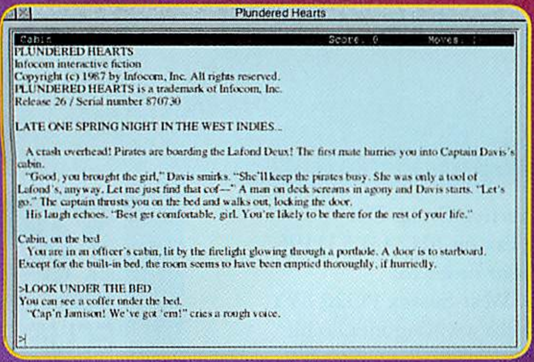
The new games are graphical adventures of the big-budget, point-and-click kind and they're made like Hollywood films...with a Director in charge

The Hitchhiker's Guide To The Galaxy, in the writing of which James Clavell and Douglas Adams collaborated. *Shogun* is the best of the four graphical games, but that isn't saying very much. *Hitchhiker's* is a sad loss, particularly as it *was* included in the last four rounds of re-issues. And for no reason I can think of, Activision doesn't use the latest updates of its games – we have a 1984 copy of *Zork I*, not the 1987 version with on-line hints, for instance. On the plus side, *Leather Goddesses of Phobos*, a racy spoof space opera, is at last getting a re-release.

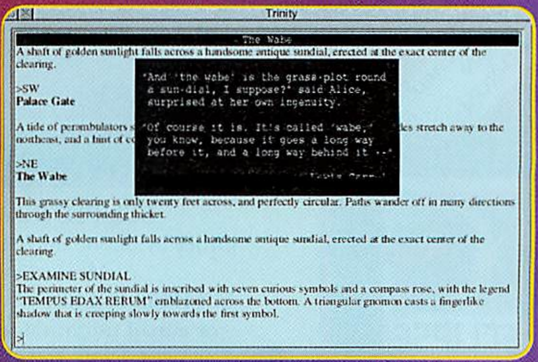
Activision is an old hand at the re-packaging game. With luck you may still be able to get hold of *Lost Treasures of Infocom*, Volumes I and II (1992), with about half the catalogue each (and on floppy discs), or the five CDs called *Infocom Classics*, which appeared last June.

The reason you might want the earlier re-releases is because they all came with printed manuals which counts a lot. *Trinity*, for example, was originally shipped with a scholarly bibliography, a photograph, a 14-page comic ('The Illustrated History of the Atom Bomb'), origami instructions for a paper crane (a bird, not a derrick), a self-assembly sundial (adorned with a poem by Emily Dickinson) and a once-classified US Geological Survey map. Clues are scattered right through, so you wouldn't want to do without.

The new Activision CD does not come with a manual, which is perhaps not surprising as it would run to about 400 pages, plus maps and hint sheets. Instead it has online documentation, well scanned-in and clearly presented, in Adobe Acrobat for-



Plundered Hearts_: the "abrupt opening" theory's finest hour



Trinity_: whatever is this doing in Kensington Gardens?

silver disc ‹ ‹ ‹

mat. The CD is readable by both PCs or Macs, and an Acrobat reader-program is supplied for either machine. While RISC OS has no problem with the disc itself, I don't believe there's an Acrobat reader for Acorns yet, so unless you can find one or have a PC board, you'll be as stuck as I am.

Playing the games is easier – you need only an Infocom interpreter, such as Kevin Bracey's freeware *Zip2000* application. Simply copy the '.../DAT' files, filetype them 11A instead of Data, and click on them.

Unexpected guests There are two bonuses on this disc. Firstly, six winners of the Internet's rec.arts.int-fiction game-writing competition for last year are included. It isn't obvious how to play these under RISC OS, but here's how.

For *A Change In The Weather*, cut a chunk out of 'WEATHER/EXE', from byte B9C8 to the end, and filetype it 11A, likewise for *The Magic Toyshop* and *The Mind Electric*. The other three games aren't written in Inform, and that I can't fix.

Secondly – and only a diehard aficionado would care about this – Activision has rummaged through an old hard disc and come up with a handful of tantalising memos and paragraph-length sketches for games that never came about. (Most promising: Paul Revere in 18th-century Boston. Least: hunting for truffles, playing as a pig...).

Somebody has topped-and-tailed these notes, so it's mostly impossible to say who wrote them and when. The exception is a minute of a 1987 meeting, trying to decide 'how are we going to keep going?' but dissolving with no answer. The writing on the wall.

Widely considered the finest adventure yet written, Trinity begins in Kensington Park just as WWII is about to break out

If you're really a true diehard, you'll wish they'd included the manuals for Infocom's game-compiler (at least one of which is known to survive), and how about the 'free sample' excerpt-games? And it's sad that the German translation *Zork I: Das Grosse Unterweltriech* – a finished game, not a plan or a draft – has still never had an official release.

```
Void
All is unformed and void; and darkness is upon the face of the deep.
>VERSION
This is the Authorized Version of King James.
>TIME
It is the beginning.
>WHO AM I
You are that you are.
>EXAMINE DARKNESS
You can't see the darkness without a light!
>LET THERE BE LIGHT
Okay, there is light.
>EXAMINE THE LIGHT
It is good.
>DIVIDE THE LIGHT FROM THE DARKNESS
It is so.
>CALL THE LIGHT "DAY" THEN CALL THE DARKNESS "NIGHT"
Called.
Called.
>EXAMINE NIGHT AND DAY
night: There is evening.
day: There is morning.
>TIME
It is the first day.
>LET THERE BE A FIRMAMENT
Okay, there is a firmament.
>FIRMAMENT, DIVIDE THE WATERS FROM THE WATERS
[Which waters do you mean, the lower waters or the upper waters?]
```

Unfortunately, this experiment was discarded

What you really get

If, on the other hand, you're saner than the present reviewer, you'd probably rather know about the games and whether they're any good or not.

The games are all traditional text-only adventure games. Those from the earliest years are slightly more primitive, but they all have the same luxury feel – they were hand-crafted and exhaustively tested. Half of them are medium-sized, with perhaps 60 to 80 detailed locations. The remainder are larger, though not always better. Even with the hints and maps (all included), each game has a good week's worth of evenings in it.

To begin with, there's the Zork 'trilogy'. *Zork I, II* and *III*, the original mainframe game divided into three parts (of which I think *Zork II* is the best). *Beyond Zork*, a curious sequel and *Zork Zero*, an unsuccessful prequel. The real follow-on was the second trilogy, also of fantasy games but with a more substantial plot-line and with the introduction of magic spells to cast: *Enchanter*, *Sorcerer* and the superb *Spellbreaker*. Another enjoyable fantasy, written as an adventure-game-for-beginners, is *Wishbringer*.

Also well-represented are detective thrillers (*Deadline*, *Suspect* and *Witness*) and science-fiction. *Starcross* has a 1950s feel to it, reminiscent of Arthur C. Clarke's novel 'Rendezvous at Rama'.

Suspended and *A Mind Forever Voyaging* are strange, experimental tries at virtual-reality games. Less seriously, *Planetfall* (a Harry Harrison-like hero gets by with help of cuddly robot), *Stationfall* (sequel to same) and *Leather Goddesses of Phobos*.

All of Infocom's games have a whimsical tone at times, but never more so than in *Bureaucracy* (where all you have to do is convince your bank that you've moved house) and the quite indescribable *Nord 'n' Bert Couldn't Make Head Nor Tail Of It*.

More variety can be found in *Infidel* (an Egyptology game, with a whole language of hieroglyphics to work out), *Ballyhoo* (backstage at the circus), *Cutthroats* (deep-sea salvage), *The Lurking Horror* (an H. P. Lovecraft pastiche, and enormously enjoyable), *Hollywood Hijinx* (movie industry nostalgia – but a game famous for its ingenious puzzles), *Moonmist* (intrigue in Cornish house), *Sherlock* (do Queen Victoria a favour and recover the Crown Jewels), *Border Zone* (espionage) and *Plundered Hearts* (bodice-ripping Mills & Boon with piracy on the high seas).

That only leaves two fairly second-rate graphical games, whose graphics look terribly dated – *Arthur*, which is Arthurian; *Journey*, a dull fantasy – and, best of all, the extraordinary *Trinity*. Widely considered the finest adventure game yet written, *Trinity* begins in Kensington Park, just as World War III is about to break out. The player slips into a surreal landscape to which, in some way, all the world's nuclear explosions are linked, in the shadow of a giant sundial. Trinity itself is the codename of the first Manhattan Project test-site, to which the game eventually winds back.

I suppose these games may go on being available in bargain-bucket anthologies, or ultimately on the Internet, until everyone has a copy, just as almost everyone has a CD of *Brothers In Arms* bought in some sale or other. But just in case the Infocom classics vanish now might be a good time to buy a copy. This is the *cheapest* and best chance so far – if you have a CD player, and can read the manual.

Free Ads

• A310, 1Mb RAM, Cub Microvitec 653 monitor, keyboard, mouse, RISC OS 2, £70. A5000, 4Mb RAM base unit with keyboard, mouse, RISC OS 3.1, faulty power supply, no hard drive or monitor, £150 RISC OS 2 programmers reference manuals, £10.Tel: (01323) 727330.

• Acorn A3000, Risc 3.1 update, Epson printer, 30 games, Learning Curve, manuals, 2 joy sticks, joy pad, Genesis, Acorn User magazines (4 years). Tel: (01932) 345226, £500.

• Pocket Book II, 512K + printer, adaptor + OPL manual, £250 ono. PSIWin software + 3Link, £50. All boxed with manuals + good condition. Contact Jamie on (01865) 557466.

• Wanted: A4 portable in good working condition. Tel: (01539) 730990 (day), (01539) 729717 (eves).

• Acorn Archimedes 3010. 2Mb RAM, colour monitor, mouse, user/analogue podule, educational games software + a years worth of Acorn User magazines. £250. Tel: (01252) 843491.

• Games wanted: Simon the Sorcerer, Darkwood, Zool, Stunt Racer etc. List of games to swap for them, including Wolfenstein, Speedball 2, Lemmings 2, Chocks Compendium, Nevryon etc. Tel: Phil on (01886) 832417 (Worcester area).

• Archimedes A420 PC and RGB colour monitor with Lotus 123, 2-2 software, games, plus all manuals. Excellent condition, hardly used. Best offer to secure. Tel: (01494) 721217.

• Sibelius 7 student v3.04h, £450 ono. Kurzweil RG100 professional electric piano, £800 ono. Tel: Andy on (01623) 634883 (evenings).

• A4000, 4Mb, 80Mb H/disc, Hi-Res monitor, Scanlight 250, Impression, Advance + other s/ware. Tons of AU mags, £800 ono. Tel: Simon (01636) 684993 after 6pm (Notts).

• Electron User magazines, subscription tapes plus loads of Electron/BBC games. Just £10 the lot. Buyer collects. tel: (01747) 855027.

• Risc PC, 9Mb RAM, 425Mb HD, AKF18 colour monitor, CD-ROM, 486 second processor, 16 bit sound card, speakers, 3.5in floppy drive, !Game on, games, DOS 6.3, manuals. £1400. Tel: (01332) 873526.

• Games for sale: Wolfenstein 3D, £12 and Saloon Cars Deluxe, £8. Tel: Paul on (01246) 551948.

• Risc PC 600, 8Mb DRAM, 1Mb VRAM, 14in AK60 monitor, 210Mb HD, 486 PC card, loadsa clipart (indexed), Impression, Larger, MovieFS, ImageFS, £1100. Tel: (01245) 474821.

• Wanted: RISC OS 3 Programmer's Reference Manual. Can collect, Cambridge area. Tel: Jonathon on (01954) 232156 (evenings).

• Computer Concepts Turbo Driver for inkjet Canon printer for Archimedes, £30. Playdays for Archimedes, £10. Tel: (01256) 478322.

• Wanted: Omar Sharif's Bridge, preferably with box and instructions. Phone Michael on (01929) 426378 (evenings).

• Graphics enhancer card for A440 wanted at low cost, eg. CC Colour Card Gold or PCATS graphics card. Tel: Robert on (01765) 604030.

• Wanted: Any CD-ROM setup for the A3000. Must work through expansion socket, also want CD-ROM software. Will pay reasonable amount. Tel: (01733) 269144.

• Starfighter 3000, brand new, unused, unwanted gift, £20 ono. Winner of best game in Acorn User Awards 1995. Tel: Adam on (01580) 752929 after 4pm weekdays.

• Wanted: ROM cartridges, twin or quad for Master 128 and any ROM software. Tel: (01303) 872976.

• A3000, 2Mb RAM, colour monitor, RISC OS 3.1, Star NL10 printer, £240. A3000 I3 network card, £40. A3000 MIDI card, £40. Tel: 0116-2311 424.

• Archimedes 310, 4Mb RAM, RISC OS 3.10, colour monitor, backplane + fan, Pipedream 4, PC Emulator v1.8 + DOS, discs, manuals, £225.00. tel: 0191-234 0119 (Tyne & Wear).

• A5000, 8Mb RAM, 25MHz, RISC OS 3.1, 120 + 330Mb IDE HDs, Samsung Syncmaster SVGA, manuals. £800 ono. Tel: (01524) 701623.

• A3000, RISC OS 3.1, 80Mb HD, 2Mb RAM, Acorn colour monitor. £250 ono. Tel: Greg (01727) 851037 (Herts).

• Risc User magazines, Beebug archive bound in six volumes, complete with discs, offers please. Also Basic and Programmers reference manuals, offers. Tel: (01268) 734215.

• Impression Style £30, Revelation 2 £20, DeskEdit2 £15, More Lemmings, Lemmings Tribes, Chuck Rock, Gods £10 each,Typing tutor, Herewith the Clues. £6 each Tel: (01323) 727330.

• Games. Speedball II, Lotus Turbo II, Populous, Zool, Virtual Golf, Saloon Cars Deluxe, SWIV, Gods. All boxed, as new. £6 each. Tel: Dave (01752) 253327.

• A5000, 2Mb RAM, 41Mb HD, AKF18 monitor, Learning Curve package and other software with Panasonic KXP1124i printer. Very good condition, £400. Tel: (01494) 675040 (South Bucks).

• A410/1, 4Mb RAM, 40Mb HD, ARM3, RISC OS 3, Eizo 9060s Hi Res monitor, Taxan printer + software, £390. Hearsay 2, £40. RISC OS PRM's, £35. E-type 2 Racing, £20. Tel: Martin (01444) 892414.

• Impression Publisher Plus v5.02, Artworks v1.5, Arcfax v1.12, Termite v1.08. Complete £250.00. WordPerfect new v6.0 DOS £75.00. Intertex Data AB Voice Fax Modem, 14,400bps Error/data compression. Boxed, as new. All manuals, £75.00. LBP4lite LaserDirect printer plus cables. Direct Drive interface card, software and new toner cartridge. Boxed, as new. All manuals. £395.00. Tel: (01959) 577551 anytime. Kent/Surrey border.

• For sale: 6 Speed ATAPI CD-ROM Drive with CDFS software for IDE bus machines. Ideal for Yellowstone RapIDE card, £85 ono. Call Paul on 0171-202 3309.

• A3010, 4Mb RAM, 80Mb HD, colour monitor, Cumana CD-ROM, 14.4K modem, joystick, Style, Easyfont, games, utilities etc. £375 ono. Tel: Chester (01244) 318389.

• A3000, 4Mb, ARM3, 320Mb HD, dual high speed serial ports, Multisync monitor, Hi-Vision digitiser, VIDC enhancer, 135Mb external SCSI and interface, monitor stand, £450. Tel: (01452) 855136.

• A3010, 1Mb , 2Mb ROM, RISC OS 3. Family Solution package with all associated software, ie, EasiWord + plinth + 9 games including Sensible Soccer & Crystal Maze, £200. Tel: (01780) 54006.

• Wanted: BBC Micro Castle Quest, call 0171-202 3309.

• A3000, 4Mb RAM, colour monitor, Star LC10 printer, hand scanner, Midi board, manuals, 100 discs with programmes and games loaded. £345. Tel: (01737) 242588 (Reigate, Surrey).

• TopicArt, Transport and Dinosaurs Clip Art, £8. Magpie £20. Movie Maker £6. Manchester United £8. Holed Out £8. Tel: (01323) 727330.

• A5000, Learning Curve, 4Mb RAM, 40Mb HD, RISC OS 3.11, Texan Multivision 795 14in monitor, VGC. Boxed wih manuals, £450 ono. Tel: (01970) 880265.

• Artworks, £80, ProArtisan, £60, SimCity 2000 (A5000), £15, Darkwood, £15, Battle chess, £5, Cannon Fodder, £10, Birds 'o' War, £10, Diggers, £10, Virtual Golf, £5. Tel: (01892) 663452.

• Elite (Gold), £15, Enter the Realm, £5, Pandoras Box, £5. SimCity, £5, Black Angel, £5, Delta-Cat joystick (for A5000), £20, Chocks Away Extra Mis, £5. Tel: (01892) 663452.

• Risc PC 600 with 8Mb/1Mb VRam/420Mb, 17in monitor, C, Publisher, games. Offers. Daytime tel: (01454) 611619 evening: 0117-925 5602, ask for Tariq, e-mail tariq@bristol.st.com

• Crystal Maze, Diggers, Flashback £13 each. Pandora's Box, Enter the Realm, £8. Repton 3, Six French Games, Terramex, Freddy's Folly, Giant Killer, Minotaur, £6. Tel: (01323) 727330.

• Risc PC with 8Mb RAM, 1Mb VRAM, 420Mb Hard disc, 486 SX PC card and double speed CD-ROM drive, two slice unit with 15in monitor, £1100 ono. Tel: (01705) 349487.

• A3000, ARM3, 4Mb RAM, RISC OS 3.1, 40Mb HD, IDE interface, Scanlight 256 scanner + digitiser, podule expansion box, joystick + MIDI interfaces, manuals/software, £475 ono. Tel: 0116-230 3270.

• Acorn R260 workstation, 16Mb RAM, 116Mb SCSI hard disc, ARM3, RISC OS 3.1, AKF50 monitor, Aleph One 1Mb 386 PC Card, £695 ono. 0181-531 9108.

• Acorn A540, 4Mb RAM, 116 Mb SCSI hard disc, ARM 3, RISC OS 3.11, AK18 monitor. £450 ono. 0181-531 9108.

• Wanted. Someone with Acorn Electron with Plus-1, Cumana disc drive and printer, to print program lists from old 5.25in 40-track floppies. Call Dave on (01249) 760253.

• Risc PC 600, 8Mb RAM, 1Mb VRAM, monitor, hand scanner, CD-ROM drive, manuals, loads of software inc Style, boxed. £1200 inc delivery ono. Tel: (01983) 883188.

• Fantastic Christmas present: A3010 ICS IDE internal Conner 60Mb HD plus interface/software. Genuine reason for sale. Excellent condition. £60. Tel: Rob 0161-283 3401 (Altrincham). Could fit locally.

• A3010, 2Mb, monitor available. Variety software + many games including Cannon Fodder, Sensible Soccer. 100+ discs and holder. All bxed with manuals. £150 ono, Tel: (01606) 76244.

• RiscPC 600, 5Mb, 210 HD. AKF60 14in monitor. Rarely used so mint condition. £800 for quick bargain sale. Tel: 0113-258 4612 (Leeds).

• A3000, colour monitor, Integrex colourjet printer, Kaga Dot matrix printer. Software: Atelier, 1st Word Plus, games. £175. Tel: (01442) 832311.

• Magazines for sale: Acorn User – issue 1 to issue 125 (Dec 1992) complete. MicroUser vol 1 issue 1 (March 1983) to Aug 1991. Offers invited. Tel: (01732) 452974.

• A3000 Learning Curve package, updated to 4Mb RAM, Colour monitor, applications, discs, Genesis, 1st Word Plus, PC Emulator etc. Excellent condition, £200. Tel: (01609) 777584.

• A3010, 4Mb, 120Mb HD, AKF50 monitor, some software, Epson LQ100 dot matrix printer, selling to buy BJ-610 so £380. tel: Glossop (01457) 868674.

• A410/1, 4Mb RAM, 36MHz ARM3, 210Mb IDE-HD, RISC OS 3.1, Multi-sync monitor, software included. £400 ono. Tel: Chris on 0171-733 5289.

• Risc PC 710, 16Mb RAM, 1.2Gb SCSI HDD, CD-ROM, DX4 PC card, sound card, Laser Direct + laser, monitor, lots of software. £1300 ono. Tel: (01646) 622415.

• For sale: Star LC-20 dot matrix printer with manual, cable for BBC computer, £50. Tel: (01922) 409454.

• A3010, 340Mb HD, SCSI, MIDI, 4Mb RAM. SVGA monitor, Eesox CD-ROM, loads of software, perfect condition. Free Securicor delivery. £450. BJ-30 printer also aailable. Tel (01698) 428907.

• Wanted: AU back issues. Dec 92, Oct 93, Nov 93, Jan 94, Feb 94, May 94, June 94, Oct 94, Dec 94, Christmas 94, Jan 95, Feb 95. Complete if possible. Also wanted – Magic Pockets and Fire and Ice. Tel: Phil (01886) 832417.

• A3000, RISC OS 3.1, AKF12 monitor, 2Mb RAM, 60Mb Internal IDE HD, Epson LX400 printer, PC emulator v1.70 and MS DOS, FirstPage DTP, boxed with manuals. £300. Tel: 0191-285 3957.

• A3000, RISC OS 3.1, 2Mb, 120Mb IDE HD, colour monitor, Video Digitizer, PRES system housing, printer, joystick, software + many magazines. £300. Tel: (01628) 31072 (Maidenhead).

• Acorn A3000 computer with Learning Curve package, Star LC24-200 colour printer, application discs, Genesis, 1st Word Plus, all manuals. £325. Contact Sue or Dave on (01737) 843149.

• 2 BBC B, 1 disc drive, 1 cassette player, software, books, joysticks. Offers. Tel: Jitin on Slough (01753) 771913 after 6pm.

• Risc PC 700, 10Mb RAM, 850HD, 4 x CD, Cumana SCSI 2, 1Gbyte H/D, PC 486, Windows 3.11, Headphones, 14in High Res monitor. £1600 ono. Tel: (01279) 724339.

• Laser Direct Canon LBP4, £300 ono. Scanlight 256, £60 ono. NEC Multisync 4FGe 15in monitor, £225 ono. Tel: Richard on (01227) 700279. E-mail rjck100@cam.ac.uk

• Upgraded to StrongARM? Well why not sell me you ARM710 card and RISC OS 3.6 ROMS. For sale or p/x – 8Mb DRAM, 1Mb VRAM + printer port sound sampler. Offers to Ian on ian@arcade.demon.co.uk or phone (01388) 766213.

• Six new Panasonic KX-P 1540 printer ribbons, £30. 64 Acorn User magazine discs (April 1990 onwards), £40. Will split. Tel: (01926) 421332.

• Risc PC 600, 9Mb, 425Mb Hard drive AKF60, warranty, 486 card, SCSI 2, Interface, Impression, Eureka, Termite Internet, Games, All excellent condition. £1050 ono. Tel: (01509) 264934 (evenings).

• Laser Direct (cc) Canon LBP4 with optional paper bin, and 1Mb memory upgrade. All boxed with manuals. £350. Tel: (0973) 692932.

• Wanted: Any DTP program, any Spreadsheet program and Advance. Will pay very good proce. Call Kulwinder now on (01203) 502528 (weekdays after 4pm, all time weekends).

• A3010, 2Mb RAM, 170Mb Hard disc, AKF50 colour monitor, PipeDream4, Games including Virtual Golf. All manuals and instructional cassettes. Excellent condition. £600 ono. Tel: (01483) 575861 (Guildford).

• A4000 RISC OS 3, 2Mb RAM, 80Mb HD, colour monitor, manuals, CD-ROM, Special Needs peripherals, Workstation, range of software, £900 ono. Tel: (01582) 861186, ask for Sue. Excellent condition.

• A3010, 4Mb RAM, 31Mb HD, RISC OS 3.1, AKF30 monitor, lots of software, boxed, magazines, loads of games in a very good condition with manuals. £350 ono. Tel: (01733) 202843.

• A5000, 2Mb RAM, 80Mb HD, Learning Curve, Philips CM8833 monitor, Star LC24-30 colour printer, Impression Junior, Personal Accounts and lots of educational software. £500. Tel: (01737) 249606.

• Computer Concepts Turbo Driver for Inkjet Canon printer. Also Playdays disc, £40. Will separate. Tel: (01256) 478322.

• Aleph One 486SLC2/50 with 4Mb RAM, no DOS or Windows software. £250. RiscPC Sound Card, £35. Tel: (01865) 779689.

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Your name:... Telephone no: ....

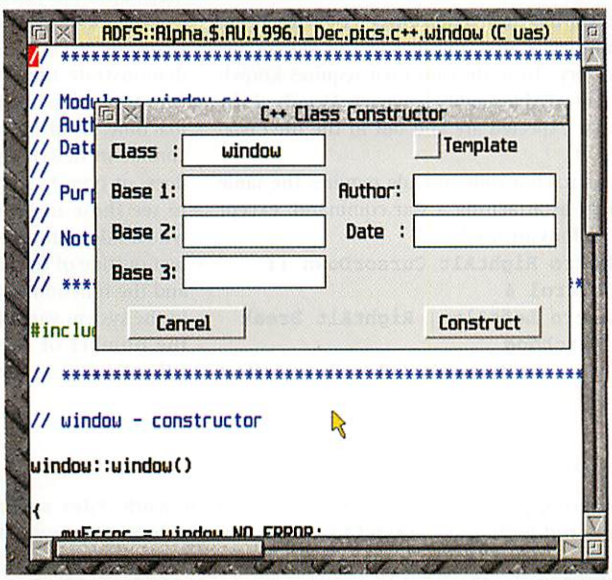
Due to unprecedented demand and an ever increasing backlog of submissions we've been granted two extra pages so read on and enter the weird and wonderful world of *info?

star info

Designer stub-ble

Author: Paul Bradley

This utility program helps a programmer to generate C++ classes as 'boilerplate' code (C++ code stubs). The program was really just an exercise using Acorn's new Toolbox and the C++ compiler. *Stubs* will generate classes that have a public and private section, a constructor and a destructor, along with an include directive in the class source module for the header file containing the class declaration. Also declared in the class is a default copy constructor and OPERATOR= methods. The program has a facility for creating the above code stubs in a standard TEMPLATE form.



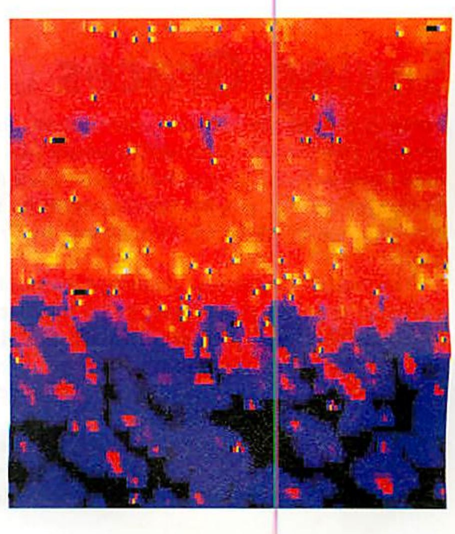
Create a 'c++' and a 'h' directory your CSD (current selected directory). *Stubs* writes the code stubs in these two directories.

- *Class* – This icon takes the name of the new class you wish to generate
- *Base (1,2,3)* – *Stubs* can generate a class which can inherit from 1 to 3 base classes. Fill in the icons with the names of the classes you wish your class to inherit
- *Template* – Will generate code stubs for you to class as a template class
- *Author* – Author of the module will be generated in each file
- *Date* – Fill in the date of when the class was created
- *Construct* – Clicking on this will construct the new code stubs.

Fiendly Grimlish

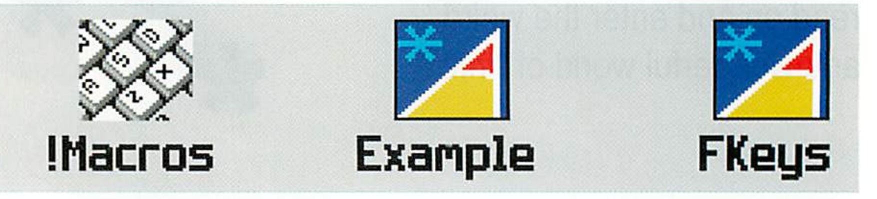
Author: Graeme Jefferis

Following on from last month's excellent *60sSciFi* tracker file, here's another audio titbit. Graeme says that *GrimSmash* is 'a quick foray into rave/techno stuff like that Barnaby Rowe chap does'. As rave/techno stuff goes it is surprisingly good and particularly impressive as it is only a tad over 32K long. When played through Flux you could almost imagine you were standing in some long abandoned docklands warehouse surrounded by 30,000 teenagers all tripping their heads off on E...



Macrocode

Author: Paul Clifford



Back in the old days we used to type obscure commands into our computers to make them do things. Since the advent of mice and icons and all things wimp-y practically, tasks have been greatly simplified and we can process out words and spread out sheets that much quicker. Certain things though are still a little tricky. Back in the old days again, we used to be able to define those nice bright shiny red keys (if you're new to Acorn computers ask a friend) to produce commands or reproduce repetitive strings of characters. Now all they seem to do is reformat paragraphs or pop up dialog boxes.

One of the simplest things the *Macros* application can do is allow you to define the function keys in the normal way and then use Alt+F1 to insert the text. In fact, *Macros* allows you to define any combination of keys, (even something like LeftAlt RightShift Q) either to execute a star command or run a piece of machine code. Because *Macros* is a module rather than a wimptask, all these user defined keys operate equally well outside the desktop environment.

Simple usage

The *Macro command can be used to attach star commands to a list of keys using the following syntax:

```
*Macro <key list> : <command> [parameters]
```

The key names are case insensitive and the '|' character may be used to specify 'or'. For example:

`LeftAlt | RightAlt Insert` will accept the left or right alt keys, plus insert.

`LeftCtrl | LeftShift | LeftAlt F1 | F2 | F3` will accept the left ctrl, shift or alt keys, plus either F1, F2 or F3.

Two examples of valid macros would be:

```
*Macro LeftAlt | RightAlt PageUp : Cache On
*Macro RightAlt LeftAlt : ScreenSave $.Screen
```

A list of all the defined macros can be obtained with *ListMacros, and they may be removed using *RemoveMacro, followed by the list of keys (without the corresponding action). For example, to remove the above two macros:

```
*RemoveMacro LeftAlt | RightAlt PageUp, *RemoveMacro RightAlt LeftAlt
```

Code Macros

A more powerful macro can be defined by writing a piece of code to be called when the keys are pressed. There are several examples supplied, details can be found in the file *MacroCode* in the Documents directory within the application. The source code for these examples is also supplied in the *MacroCode* directory. To write your own requires knowledge of ARM assembly language. Details of the format expected are laid out in the file *Code-Format*

Macros allows you to define any combination of keys, (even something like LeftAlt RightShift Q) either to execute a star command or run a piece of machine code

To attach a code module requires the same syntax as attaching a star command, except two colons are used:

```
*Macro RightAlt CursorDown :: CDControl 4
*Macro LeftAlt | RightAlt Break :: Watchdog
```

Before these macros will have any effect though, the code in question must be loaded into memory using the *MacroCode command. The names of all loaded code modules can be found by looking at `*ListMacroCode`, which also gives a brief description, together with version and date.

Code modules are removed using *RemoveMacroCode, passing the name of the module in question: `*RemoveMacroCode Watchdog`. Any macros using the code will cease to work until the name becomes valid again.

Names of keys

Some keys can be referred to by multiple names, *Shift*, *Alt* and *Ctrl* can all be pre- or post- fixed with *Left* or *Right*. Cursor keys are referred to as *Up* or *CursorUp*

Key names can be replaced or added to by use of a keymap file which is passed to the module when it is first loaded. This is used to cater for the Risc PC's keyboard, which is different from those supplied with previous Acorn machines. If you wish to write your own custom keymaps, take a look at 'KeyMaps.PCKeysSrc' for an example.

Two example obey files are provided – *Example* sets up a number of macros to demonstrate the module, providing various functions depending on the setup of your machine. Load it into a text editor to see the comments describing what each of the macros does, or type `*ListMacros` after running it to see those installed. *FKeys* sets up macros which allow the use of function keys to enter text outside of the command line. Pressing *Alt* and the function key will enter the text stored in the system variable `Key$Xnn.` where nn is the number of the function key, and X is either S (*shift*), C (*ctrl*) or SC (*shift* and *ctrl*).

Saving Graces

Author: Justin Fletcher

Justin is one of our regular contributors and invariably comes up with some useful little utility which you wondered how you ever lived without. If you have ever used *Memphis* (the Mem: filing system) you will be familiar with its facility to save files into the root directory of mem simply by dragging them to the icon.

This month Justin has supplied a couple of modules that intercept saves to ADFS (and SCSI) filer icons on the icon bar and translates them into saves to a useful directory. This is particularly useful for some (badly written) wimp progs that don't keep their save boxes open when you suddenly realise you've forgotten to open a filer window.

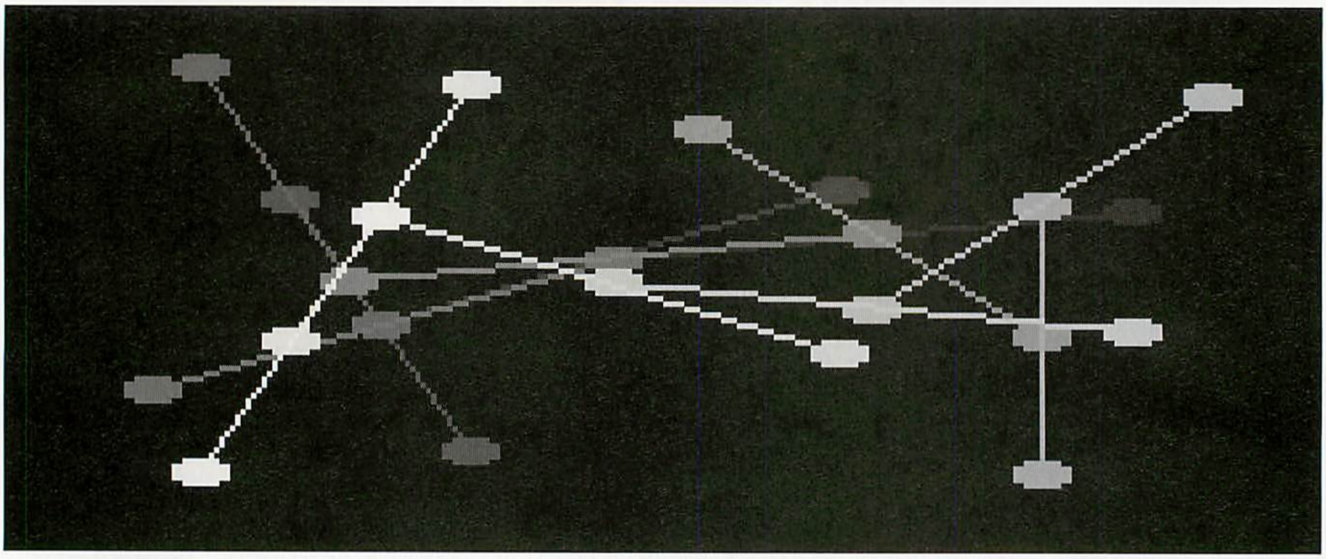
The source code is provided, but you need only double click the *!Run* file to load the module. There is a small oddity in that you must click on the filer icon once after loading the patch to make the interception work. Files saved to the filer icons are saved to the path variable `QuickSave$Path` which by default is set to `.$.Temp.` - note the leading '.' - the *filing system and* drive name are inserted before this character. This directory can easily be changed by editing the *!Run* file – you may find it more useful if this variable is set simply to .$.

The module works by claiming filter events for the filer and mouse clicks. When the first mouse click is received it adds the message code 17 and 18 to the Wimp_Poll, otherwise the ADFS filer won't actually receive the DataSave messages to tell it that a files has been dragged onto it. When it does receive a DataSave message it responds by telling the application to save the file to the quicksave directory.

The module does not intercept filer copy so dragging a file to the ADFS icon will not copy the file into the quicksave directory.

Fatal attraction

Author: Mark Adcock

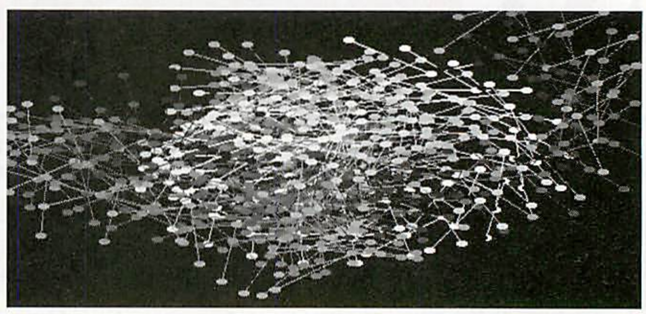


Well, not particularly fatal. Not even slightly harmful in fact. This eminently harmless form of attraction is just one of four little ditties.

Of *Attraction* the author says: "in this program a dozen or so 'things' move around the screen, trying to stay close to the others. The unhappy ones turn purple when they are out of range. If you hold down Select they will be attracted to the mouse pointer. Menu makes them run away from it and Adjust restores them all to the centre of the screen."

ST2 and *ST2rand* mark the return of the genre of Stringy Thingies! The former uses calculated rotation whereas the latter uses random. Two banks of screen memory are used for smooth plotting (make sure you have enough allocated – a small test message at the start indicates whether you have or not). If you really want to, you can hold down Space to prevent the programs clearing the screen between frames. I wouldn't though, if you value your eyesight.

Finally, *ROTSPIS* (which sounds like one of those murky guest ales you get in rural pubs sometimes) actually stands for Revenge Of The SPIral Staircase. It is a tribute to one of those early one-line gimmicks which combined line plotting with carriage returns for nifty animation on slow old machines. This all-new version uses the trusty RECTANGLE TO command to scroll the screen in all directions.



The infernal triangle

Author: Alistair Turnbull

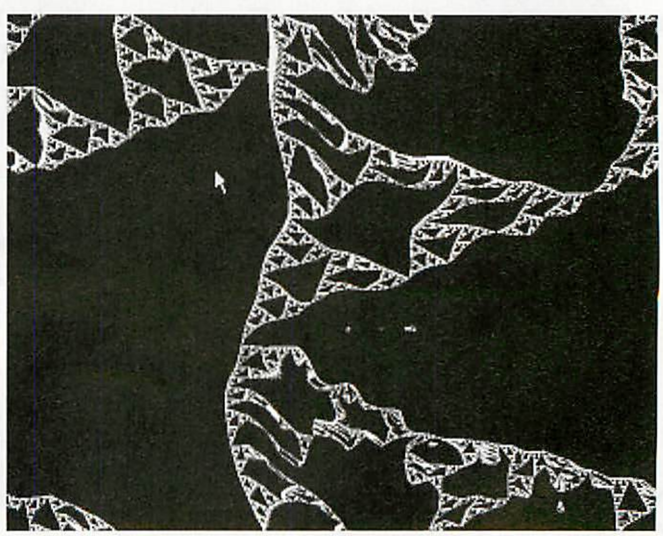


In the absence of any Vibisms in our specially extended *info, we are very pleased to be able to give you a couple of Alistair Turnbull productions.

Balls is a tension reliever. It drops balls from the top of the screen with unrealistic accuracy, so they all pile up on top of each other. That's the tension. Then some well-meaning but gormless ball bounces in from one side, and the whole lot collapses, providing the relief. Sometimes it doesn't work out that way, and all the balls end up balanced, at which point pressing R will restart everything.

WibbleTri is a combination of three techniques. It draws a Sierpinski triangle distorted in both directions according to a wave equation, with anti-aliasing. You can influence the wave equation by dragging points around the screen using the mouse.

There's a cunning trick for generating a Sierpinski triangle: If the logical AND of the x and y coordinates is 0, the point is white, otherwise its black (the accuracy of the coordinates determines how fine the picture is). The anti-aliasing is achieved by oversampling (every pixel is coloured according to how many of a 2x2 grid of sub-pixels are white). It's not very fast, so there is an option to choose the size of the playing area. Small pictures run faster than big ones, naturally.



Air restorer

Author: Mr Adamson

Our favourite music teacher, Mr Adamson, (or old crotchet-face as we call him in the playground) has been hard at it again. This time he has turned his attention to early music and restored four popular airs from the middle-ages (popular I imagine, because they took peoples minds of the plague and suchlike). MIDI and Rhapsody versions of the following hip and happening tracks are to be found on the cover disc:

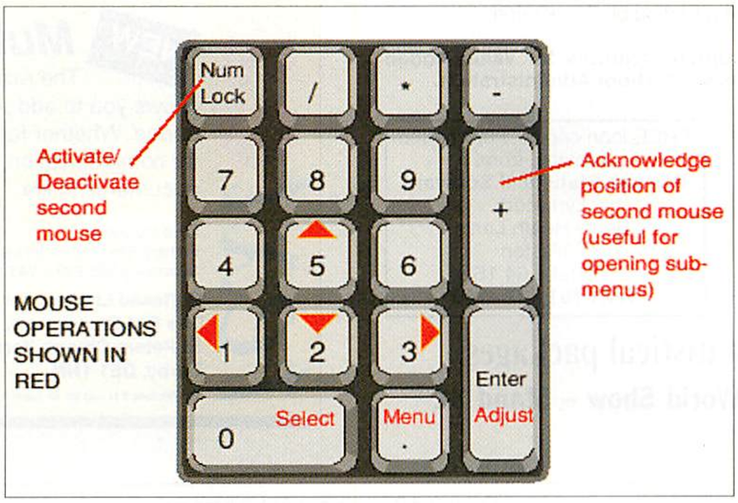
- *Pastime With Good Company* – attributed to Henry VIII
- *Ploughboy* – an old English Rustic tune
- *Rigadoon* – written by Purcell, apparently shortly before he discovered the formula for washing powder and retired on the proceeds
- *Allons Danse* – roughly translated means "dense alloys", presumably a musical tribute to the skills of mediaeval metalworkers.

Two mice are better than one

Author: David Llewellyn-Jones

Have you ever been in that trickiest of situations where one mouse pointer is just not enough? Well, your worries are over for here is exactly the module you've been waiting for.

Load the module by double clicking on it, then simply use the keys as shown in the diagram to control the second mouse. `TwoMice` is perfect if you want to play two player *Minehunt*, *Bambuzle* or *Lemmings*. Alternatively, play a desktop game while somebody else writes a letter or programs. It should be available at almost any time by pressing Num Lock. It even works outside the desktop.



The *TwoMice* module supports one star command: `*TwoMiceStep`. This should be followed by two numbers, which then sets the speed of the second mouse pointer. The first number is the initial speed of the mouse pointer as it starts to move, the second number sets the speed which the mouse pointer will subsequently move at after a short delay if a direction key is held down.

The default is `*TwoMiceStep 4 14`.

This is slow to begin with (4) and then becoming much faster (14). If you only supply one number then the mouse will remain at just this speed. If you don't type any numbers after the command, the current settings will be displayed.

Smudge ado about nothing part 2

Author: Keith Wood

Whenever we get a disc from Keith Wood someone always says "wasn't he in the Rolling Stones?" I digress. The latest floppy to wing it's way to us from the depths of Bradford contains a 256 colour version of Keith's earlier *Smudge* demo.

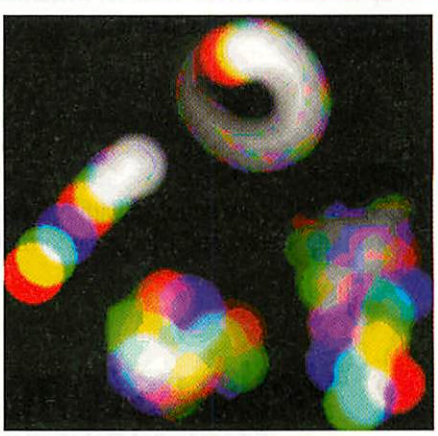
Smudge256 is basically a 256 colour pixel softening routine that will work in any 256 colour mode. The mouse is used to move the brush. All buttons can be used to paint with.

Keys 1 - 6 select which brush to use (number 4 is our favourite). 'P' will suspend the softening routine and 'S' will save the painting window.

"How does it work? Well, the code sets aside a large area of memory that is configured as a sprite. The sprite is divided into four equal sections:

1) Full-colour section
2) Red section
3) Green Section
4) Blue section

"Sections 2, 3, 4 can be considered to be one large area, each containing four 4-bit numbers in the bottom nibble of each byte in each word. This means that 256 colour



mode VDU operations can be performed on the red, green and blue sections just as long as the GCOL is fiddled.

"So all painting is done to one of the red, green or blue sections by switching output to the sprite, fooling the VDU driver into selecting a GCOL that outputs a colour number in the range 0-15, and shifting the cursor to the required section, while clipping the section with an appropriate graphics window (ouch!).

"The GCOL setting has to output a colour number in the range 0-15, as the colour manipulation works the RGB components that are exactly 4-bits wide. The averaging routine labours through all of sections 2, 3 and 4 together, but is nothing special, except that the four 4-bit RGB components in each word are averaged together to speed things up. The RGB sections are then converted into the internal colour number format and placed in the full-colour section before being poked to the screen.

"The only drawback with the code is that bitmaps can't be used to draw with unless they are operated into their RGB components, or an extra piece of assembler is written to do the conversions in real time.

"Actually, adding this shouldn't make a lot of difference to the speed of the execution, as decoding can be done a lot faster than encoding and at the moment, the encoding only takes up about 20 per cent of the time. This code does not cheat by skipping over large areas of black or uniform colour, although it would be tempting . . ."

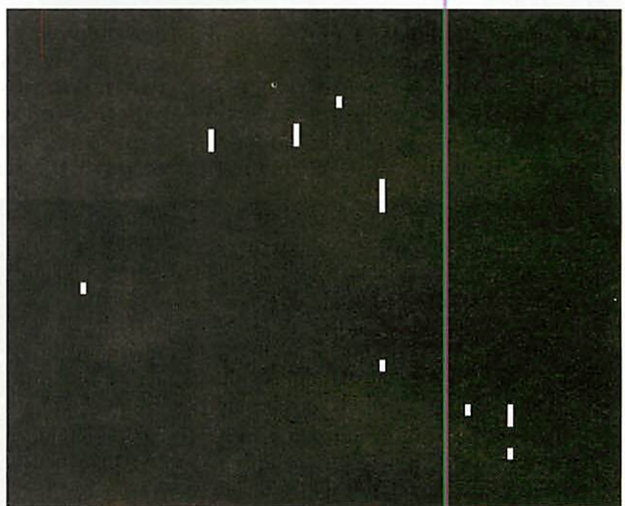
All pull together

Author: R Geleit

I wonder if that Isaac Newton blokey, apple puree freshly dripping down his wig, had any idea of the ramifications of his musings? Did he, for example, anticipate that the likes of R Geleit might come up with some neat little demonstration of the mutual gravitational attraction of particles? I rather think not. The discoverer of gravity would, nonetheless, have been very impressed by this little program, not least because it is written in fast ARM code, which is a good deal niftier than the 6502 Isaac used to dabble in.

The number of particles or 'stars' is set to 24 by default but can easily be increased (in multiples of 8). Try 40 or more if you have a fast machine. The screen wraps around, so the particles are effectively milling about on the surface of a doughnut. (Next time you eat a doughnut, do inspect it for particles – we don't want any readers going down with botulism after all.)

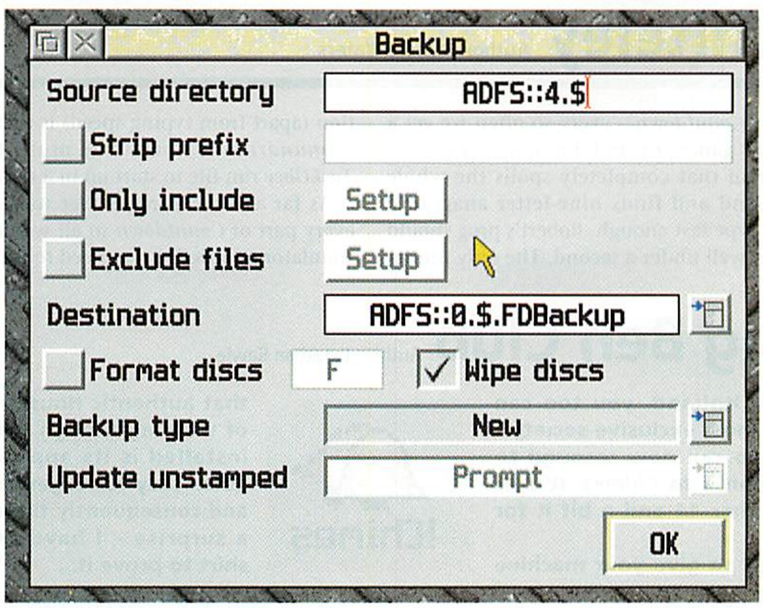
A maximum velocity is imposed to prevent things getting too out of hand. In general, the stars just herd together, much as sheep on roller skates might if connected with lengths of elastic.



Floppy backups...

Author: Francis Devereux

...are not the latest exercises to become popular with the weak-spined, but are what you can do with this invaluable utility. If you want to archive a directory or your whole hard disc to a series of floppies, this program will do the business for you, compacting the data as it goes.



Install in the usual way. To make a backup select Backup from the icon bar menu to open the main window. Enter the source directory, or drag it to the writeable icon.

The 'only include' option, if selected, enables you to choose which files are to be included. Just click on Setup and drag the files you want into the include window. Similarly, the 'exclude files' can be used to miss certain files out (e.g. big junk files).

The destination filename can be entered, or you can drag the save icon from the pop-up window. Note that the destination filename is generalised – the disc name is replaced with a drive number so that more than one floppy can be used. **adfs:** and **ram:** work fine for making backups too; **net:** and **mem:** do not. You have the options of wiping and/or even formatting each floppy used in the backup process.

A choice of backup 'type' is possible. The New option allows a new, full backup of all files. Continue allows you to carry on with a previous backup that was halted prematurely for some reason (e.g. a crash). The Update option is perhaps the most useful, allowing both incremental and differential updates to archives. The former adds files with datestamps after the last backup. The latter includes all files created since the last backup. Finally, if you ignored a directory in a previous backup and now want to include it, use the Add dir type to add a single directory.

If you are doing an Update, you will need to decide what to do with files which have no datestamp. A pop-up menu provides three possibilities – to always update unstamped files, to never update them or to prompt you whenever an unstamped file is encountered. (If you have a lot of unstamped files it may be worth setting their type to data if this does them no harm.)

The Catalogue window can be brought up either from the icon bar menu or by double-clicking a backup file while holding down CTRL and is used to display the contents of a backup file. You can limit the catalogue shown by specifying a string with which filenames in the backup must begin. Wildcards (# and *) can also be used if the appropriate option is ticked.

If you want to restore your files from a backup (and let's hope you don't need to do this too often) bring up the Restore window using the menu or by double-clicking a backup file. You can specify which files are to be restored by entering a start string – this is the same as for the Catalogue window. You can also move the 'root' of the backup (if you want to restore to a place other than from which you took the backup in the first place). Just tick the box and enter the pathname, or drag the icon to where you want restoration to take place.

When restoring, you can specify that locked files are to be overwritten. Existing files in general may be overwritten always, never, or only if newer.

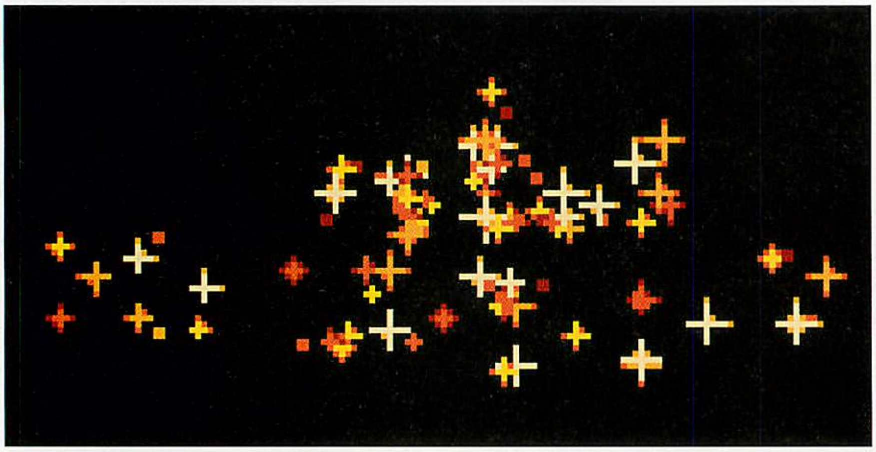
Finally, an Options window allows further configuration of the program. *FDbackup* can run as a single task and can also use the full screen rather than working in a window. If you choose this, you can specify a screen mode like 0 in the icon provided, so that the backup will be faster. Another option to 'fill' discs at start can also make backups faster, as files need not be extended as the disc fills up (reducing head movement). Only larger backups will benefit from this though.

A "config" file containing your choices can be saved and reloaded by double-clicking. Some examples are provided on the cover disc.

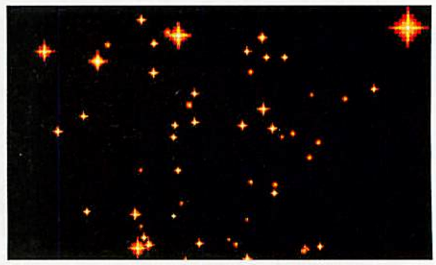
A finger beauty is a joy forever...

Author: Nigel Stoner

A whole new concept in pointer utilities now, and a lottery program with a difference. Yes, we've carried programs to help you predict what those winning numbers might be, and programs to illustrate that it's a mug's game anyway. Now, hot from the fingers of Nigel Stoner comes *ItCouldBe* which will provide you with valuable practice for when the finger of fortune does actually come hurtling through the stratosphere to poke you in the ribs.



The starry hand is actually a variant of another of Nigel's creations called *SpaceBalls*. Simply press Escape to see this alternative spangly concoction. (Actually, we should confess that we didn't realise Nigel had included this extra at first – that'll teach us to read the instructions...) The demos are in code of course and just rely on a good scaled sprite plotting routine. There are of course the obligatory sin and cos tables in there somewhere too.



Spritely Whiteley

Author: Robert Waters

*info readers must be fond of *Countdown* – every so often we get a new prog to solve the numbers game or search for long words. This time we've received a program that completely spoils the whole point of the conundrum round and finds nine-letter anagrams. Assuming you could actually type fast enough, Robert's prog should be able to find the solution in well under a second. The only limitation (apart from typing speed) is that it 'only' knows 10,000 words. *!Conundrum* is not a true multi-tasking program, but uses a *TaskObey* run file to start up in a task window.

As far as we can remember we now have solution programs to every part of *Countdown* so all we need is a Richard Whiteley pun-simulator and we'll never need to watch Channel 4 again.

Join the Big Ben Club

Author: Jonathan Rawle

Even if you don't live in Holland, you too can now be a member of this most exclusive society – in a fashion. Your desktop can now resound to Westminster-style bells thanks to *Chimes*. It uses a mere 16K slot plus another 14 and a bit K for the bell sample module.

A small price in memory to give your machine that authentic Houses-of-Parliament feel. A word of warning though – the only clue that *Chimes* is installed is its appearance in the task list. It's quite easy to forget that the program is running, and consequently the chimes can come as a bit of a surprise – I have the coffee stains down my shirt to prove it...



*QUIT

All programs, hints and tips, music and mayhem to:
*INFO, *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP
or, if your submission is **100K or less**, e-mail us (including your real address please) at:
austarinfo@idg.co.uk

You needn't include a letter but please put your name, address and program title on every disc and include a text file containing your name, address, disc contents and program details. Saved screens, drawfiles and background information are a nice extra and an SAE will ensure your discs are returned. *info submissions only please – if you are submitting material to another section of the magazine it will be processed more quickly if you send it separately.

** Actually, we've got an extended issue next month as well so hang on to your hats then and keep an eye out in four weeks time for another six pages of the strange and bizarre from the very depths of the *info postbag.*

Compatibility table

Program	RISC OS 2	RISC OS 3	RISC OS 3.5+
Attraction	Yes	Yes	Yes
ROTSPIS	Yes	Yes	Yes
ST2No	Yes	Yes	Yes
ST2 Rand	No	Yes	Yes
Stubs*	No	Yes	Yes
Macros	No	Yes	Yes
FD Backup 2	No	Yes	Yes
FDDte Strip	No	Yes	Yes
ADFS Quick S	No	Yes	Yes
SCSI Quick S	No	Yes	Yes
Gravity	Yes	Yes	Yes
Two Mice	Yes	Yes	Yes
It Could Be	No	Yes	Yes
Balls	No	Yes	Yes
Wibble Tri	Yes	Yes	Yes
Smudge 256	No	Yes	Yes
Chimes	No	Yes	Yes
Conundrum	No	Yes	Yes

*Needs Toolbox modules

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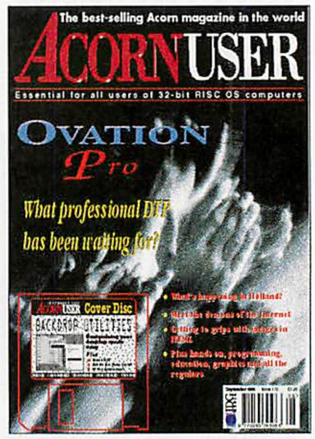
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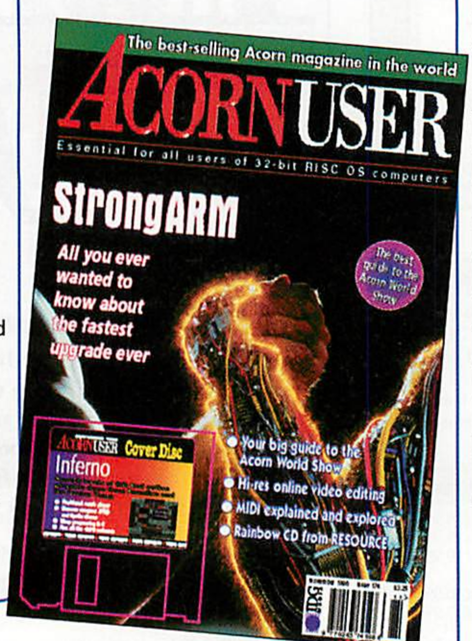
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the sound square

Mike Cook turns his hand to music improvisation

When will I learn to keep my mouth shut? We were having a nice family day out at the excellent Eureka science museum in Halifax when we entered the sound room where all sorts of exhibits turn movement into sound.

You can leap from pads on the floor, assault a giant rubber bulbous horn or run your hand over a laser harp. It was this last one that caused my undoing. 'I could make one of those,' I idly said to my children. 'Bet you couldn't,' came the reply. So that was it – the course was set for this month's project.

The exhibit does have one thing that's missing from my design – it uses a laser so when the beam is broken you can see it on your hand. Lasers are quite expensive – about £90 for smal, low-powered ones – and to make the one laser create several beams some slightly clever optics are required. I decided to forgo the visible part and increase the range of notes enormously. The exhibit allowed you to trigger eight notes but my design extends that to 64.

I didn't start from scratch on the hardware. Most of it was lying around from a touch-screen system which featured in the special issue of *Acorn Computing* in 1994. This consisted of an aluminium frame with eight infra-red photo beams in both horizontal and vertical directions.

The idea was to clamp it to the front of a monitor and by sensing which beams were interrupted you could work out where your finger was pointing. To see the original article, look at my web site on http://physics.mmu.ac.uk/Physics/Acorn. All the circuit diagrams you need are there.

I dragged the hardware out from behind the door where it had been for over the last two years and connected it up to the Risc PC. All did not go well for two reasons – first, as the frame was not clamped on to a monitor, more stray light was getting into the sensors and second, the faster rise times on the printer port of the newer computer were causing some strange interference problems.

The last point was cured by making a small filter on the reset line of the counter and is shown in Figure I. The idea is that the counter receives pulses from the computer and turns on one horizontal and one vertical LED at a time. This is done by feeding the binary count into a 7442, a binary to decade decoder, and using the output of that to feed some buffer drivers before sending it to a pair of LEDs.

Across the square from each LED is a photo diode. These are connected so that when anyone sees a beam it signals the computer, see Figure II. Note that two of these circuits are required – one for horizontal and the other for vertical beams. It is possible to just use one row of beams like the original exhibit, but the software will need modifying – more of that later. To stop photo transistors picking up adjacent beams the transmitter and receiver are staggered along each side as shown in Figure III. This design works well

Figure I: The circuit diagram of the IR emitters

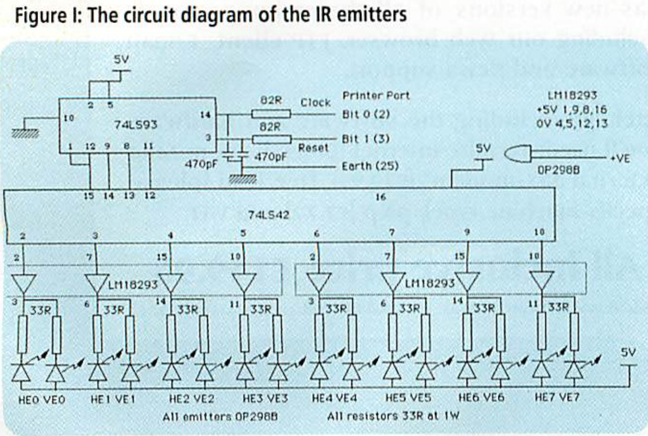
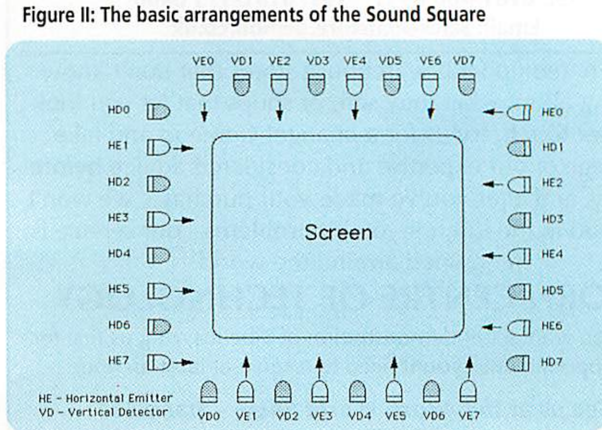
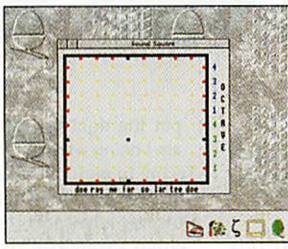


Figure II: The basic arrangements of the Sound Square



but it can still suffer from light interference either from adjacent beams or stray light. I minimised this problem by putting infra-red filters over each photo transistor, but if only one photo transistor is triggered from stray light, nothing on that side will work.

When making the hardware specifically for this project, you can space the beams further apart. This will also help to minimise spillage. I originally had them at 3.5mm intervals but this could easily be doubled.



Note that on each LED and photo transistor I put a 3mm card tube to restrict the beam width.

To test the system, a small basic program called *Touch* scans the beams and draws red rectangles over the columns and rows where it finds the beam blocked. This uses the system user port calls, so with a single direction printer port you first need to load in my relocatable module.

Having got the hardware input device working and tested we can get down to the real fun. An excellent feature of the original exhibit was the quality of sound produced. To this end I have written the application with two different possible sound sources – the internal sound and a MIDI system.

There are also two possible input sources – a mouse and the sound square itself. Unfortunately you can't use both at the same time. The internal sound and the mouse are really only just for testing – to get the full effects you really need to use a MIDI system. This involves having a MIDI interface card feeding into some sort of MIDI sound module, more of which later.

The sound square is capable of triggering 64 notes. I have arranged that sound is produced in two banks – upper and lower – each bank being a different type of sound. The notes along the length are the eight notes of an octave. There are 12 notes in an octave but for any one key you only use eight. Therefore, a menu item allows you to select the key of the sound square.

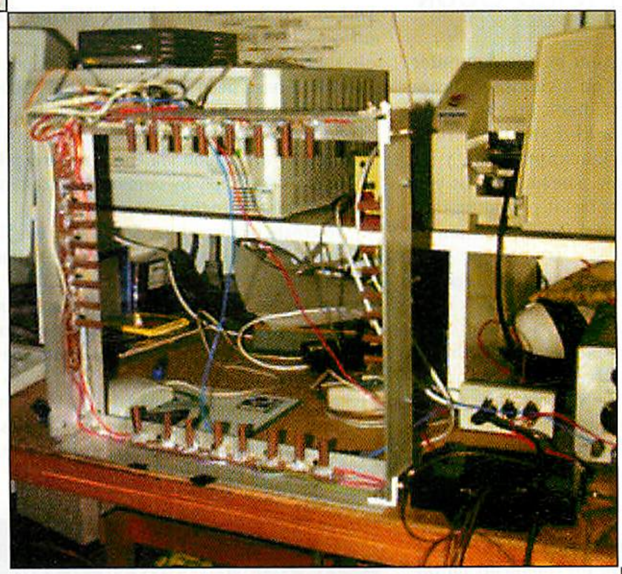
The computer's internal sound system works by representing each note by a number – a semitone is represented by an increment of 4. The MIDI system is similar except a semitone is only an increment of 1, so it is relatively simple to convert one system to the other.

For the internal sound, the two banks map to channels 1 and 2, and for the MIDI they are sent out on channels 1 and 2. The main difference is that the internal system is monophonic whereas the MIDI is assumed to be polyphonic. This means that the internal sound system can only play one note at a time. This can be changed to polyphonic but I will leave that as a programming exercise for you.

As the MIDI system is assumed to be able to play many notes at the same time, I have included a chord option on the MIDI side. When you play a single note you actually get three produced – which three depends on the type of chord. I have labelled the chords after the notes that would be played if you played a C in the chord of C but what you are really doing is adding note offsets to the note you want to play.

The program's display represents the light beams along each side and the squares in the middle are the intersections. If the mouse option has been selected from the menu, clicking on a square will turn that note on and change the square to black. It will stay on until you click on it again or on another note. When used in the sound square mode the note square will go black when you put your hand at the appropriate place.

So how does it work in practice? Well I must admit it sounds and feels rather good. To someone with limited musical talent, this can produce some passable attempts, if not music, at least a half-decent sound.



The sound square in all its glory

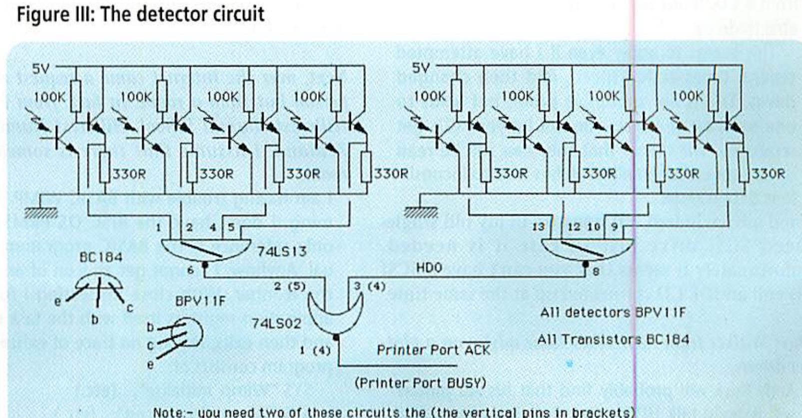
All you need do is waggle your hands about rhythmically and the sound comes out in a similar manner.

My favourite combination is to set the lower bank to a rich organ sound and assign the top bank to a drum kit, producing a good improvised jazz sort of sound. The great thing is that all the notes produced are in the same key so nothing ever sounds discordant, well not to the player at least. AU



My son Alec plays his latest masterpiece

Figure III: The detector circuit



Rambles through Acorn

Another selection of problems and solutions from Mike Cook

Strange and noisy goings-on by the computer this month. Alec has hit on a cunning wheeze to improve gameplay. First, hook up the sound system to one channel of a hi-fi amplifier, then place the speaker in a rucksack, put it on your back and turn up the volume. The idea is that you not only hear the sound but feel it pounding into your back. I must say it adds a new dimension to games.

It is especially effective on games like *Angband* or *Doom* where you can literally feel the kick back of the noisy machine gun. It adds a greater sense of immersion for the player but tends to be heard all over the house – why not try it and see? I admit this isn't an original idea. We saw a review for an *Aura Interactor*, which is basically a speaker that straps on to your back, so if you want to buy a custom one contact Aura on 0161-973 0505 – it will cost about £80.

Andy Marsh from Stevenage provides some feedback from a previous problem with his comments on the use of CD drives at slow speeds:

You mentioned in Acorn User Oct 96 that you had established the fact that Yellowstone had a patch for the CD-ROM speed problem. You say that you can't think of a time when you would need to slow the drive down. I've thought this myself about my Sony drive, but have come to one conclusion. When a CD is slightly damaged (usually scratches), I often cannot read data from it at double speed. By using the CDSpeed command, the drive can be coaxed into reading the CD, as the data read is more accurate (I hope this is correct, I really know very little about CD-ROM drives). It is true though, that on most of the occasions that I haven't been able to read data from a CD, reducing the speed has lead to being able to do so.

This seems to apply even if I have attempted several times at full speed, and then changed down. This is not conclusive proof, but leads to one small bit of advice – do not let your CDs get scratched. The theory that they can still be read is nonsense. Even small scratches lead to inconsistent data transfer.

Good advice indeed, I'll hang on to my old single-speed SCSI drive just in case it is needed. Unfortunately it seems that you can't have a SCSI CD and an IDE CD connected up at the same time.

Dave Walker from Acorn has some advice on a plotter driver:

Andy Rose will probably find that his A0 plotter will happily talk HPGL. Oak Solutions (now Dial Solutions) did an HPGL driver (effectively a bolt-in to !Printers) a while back for use with their CAD programs; if he's lucky, he might still be able to get hold of this and if he's even more lucky, he might persuade it to work.

And on the same topic Simon Wilson has this advice:

In reply to the letter from Andy Rose about the plotter, I have been using one on my A5000 for which I do not have a real driver. It is a Silver Reed electronic typewriter/plotter which is connected to my A5000 via the standard printer port. It works simply by sending draw commands and coordinates to the printer.

To create pictures, I use SolidCAD from Silicon Vision. Then using the plotter driver (!SuperPLOT), I print the vector picture to a file. I then open this file in Edit to add the suitable control code to activate graphics mode (Hold down ALT and type 18). Then just print this using the normal Acorn printer driver, selecting Plain text when asked (if using DATA files). Look in the manual to see what codes the printer uses. My printer uses commands like D250,150 to draw a line width 250 by height 150.

There seems to be a widespread problem with printer drivers missing off the last few lines and I'm not sure if there is a definitive answer

Thanks for that, my own A3 plotter (which I had to buy many years ago for PCB layouts) now stands mainly idle. I last used it to plot the positions of stars to allow me to make a large planisphere. It used similar commands and these were incorporated into a Basic program which is no use to anyone without the same sort of plotter (Graphtech).

Next, over the Internet came a request not from a person but from a room. In fact, from Room 9, in Hillcrest Normal School, Hillcrest Hamilton, New Zealand. I assume that there is someone in the room:

I am having trouble with BASIC WIMP programming. I don't have the RISC OS PRMS and my only reference is the BASIC programmers manual. Anyhow, I cannot get an icon of any sort on the iconbar. With close inspection I found the application registers itself with the task manager and then exits, leaving no trace of existence. The program consists of:

```
SYS "Wimp_Initialise",  (etc.)
SYS "Wimp_CreateIcon",  (etc.)
```

The program runs with no errors as long as I put the right variables into the SWI calls. What am I doing wrong?

Trying to perform windows programming without the PRM is somewhat of a hit and miss affair. However what puts the icon on the bar is the SYS "Wimp_CreateIcon" command. You need to pass it the correct data and the icon you use must be in the sprite pool. The 'Iconise sprites' command in the !Boot or !Run file puts the sprites in the sprite pool. Then you need to go into a loop with a Wimp_Poll in it which allows the operating system to draw the icon.

I believe there is a version of StrongHELP that covers window operations. However, this is not the best way of tackling the problem. You need to take a simple working program and hack it about. That's what I do when I want to create a new windows application. So, look at some of my applications from *Run The Risc* and feel free to hack them apart. The bit you need is always defined as a function 'FNicon' in my programs.

Jonathan Gutteridge has a familiar problem with printers:

My dad has just bought a Hewlett Packard Deskjet 600 printer. We bought a copy of the Turbo Drivers from Norwich Computer Services (our local dealer) for it. The big problem is that it doesn't print the last few lines of the page. And since my dad puts a footer at the bottom of the page this doesn't appear. We own an A5000 computer and we are using the Turbo Drivers lead with !Printers v1.53. We have contacted CC and they told us to get a new version that caters for the DJ600 but there are still no drivers that support our make.

There seems to be a widespread problem with printer drivers missing off the last few lines and I'm not sure if there is a definitive answer yet. You will find that you can put your printer into a diagnostic mode by turning it on while holding down some keys on power up. Print out a blank page with your footer and you should then see the codes being sent to the printer.

Match those with the control codes in the printer's manual and see what is not being understood. Alternatively totally deinstall the Turbo Drivers and go back to Acorn's drivers and try each one. Even though your printer is not mentioned specifically, there may be one that will work. Finally, try setting the paper specification in the printer driver to a smaller size. It could be a mismatch between the driver's expectations and the printer's. Anyone got another solution?

Darien Armitage from Huddersfield is facing that problem we all have from time to time:

I have recently purchased a second hand Archimedes with an 82Mb hard disc drive and I was hoping you could tell me what I do once my hard drive is full? I know this must seem like a silly question but this is my first computer and I know very little about them.

Wood

Now is the time to look through your drive and see if you really need all that stuff you have acquired or whether some of it could be archived to floppies. If you really find it indispensable you have a few options. Perhaps the simplest is to replace your disc with one of higher capacity – by modern standards yours is a bit small. Mind you, I remember being delighted with my first hard drive – it had a capacity of 5Mb, but that was a few years ago.

The problem with replacement is that you have to transfer all your old stuff off the drive on to floppies before you change it, so you might consider adding a second drive. Basically you have two choices – IDE or SCSI. The internal IDE interface can normally support two drives, but not all Acorn machines have room to add them internally. IDE is supposed to be an internal interface only but I have had several reports of people putting them on a short external lead.

For SCSI drives you need to get a SCSI interface to plug into either the internal podule space or your printer port. Then you can connect up to seven other devices to this bus. This can include CD drives, removable hard discs and scanners. However, the SCSI is the more expensive option.

Talk to some of our advertisers, remember to get more than one opinion though – despite Acorn suppliers being the most honest in the computer industry they are still out to make a living.

Ivor Clark from Nuneaton has some words of advice that are worth listening to:

The reason for this letter is to warn other folk of a problem I have had with my Computer Concepts ScanLight 256 hand scanner. About three years ago I purchased one for my A3000 and it worked very well with this machine. Because the A3000 does not have a 12v supply, power was provided by a small transformer included at the time of purchase and I was told that the board was only for the A3000 computer.

About 18 months ago I upgraded to a Risc PC 600 and used the scanner with the original board and transformer power supply, with no problems after upgrading the software. Three months ago the output from the scanner deteriorated quite markedly, with the scan being made up of different density lines running width wise across the scan. I made a phone call to CC and soon a cheque was in the post for a new replacement head.

When it arrived the scan output was just as bad as the original. More calls and a return of the new head and old board. Back it came with a clean bill of health but it still didn't work correctly in my machine – just the same effect of uneven scan density lines across the frame, giving an unusable output. To cut a long story short, it appears that all ScanLight 256 boards are the same but for a small link on the circuit board marked LK2. This link is missing on boards sold for the old A3000 machines which needed an external power supply, but is on all others with internal power supplies.

This link re-routes the power from the back socket to the multi-socket pins. So if any owners of ScanLight 256 scanners find problems with the output becoming stripy, try throwing away the little transformer first, and either replace it if you are using the same machine or fit a link to LK2 if you have up-graded; it could save you a replacement unit.

Thanks for that warning, I am sure it will help others.

J A Hagger from Maidstone asks:

I have just come into the possession of two classic micro computers, a BBC model B and a BBC Master series. Please does anyone out there support these machines with new or second-hand software?

I have had a few inquiries of the same sort lately and despite a little searching I have mainly drawn a blank. A few sites like Hensa have old BBC software on them, but if all you have are these machines then you can't access them. Internet searches revealed a few sites and groups supporting the old machines but when I tried to contact them they had gone away. Acorn itself still maintains a number of application notes on all the old machines – including the Electron – on its Web site at http://www.acorn.co.uk/acorn/library/ref/appn_6502.

> **Mind you, I remember being delighted with my first hard drive – it had a capacity of 5Mb, but that was a few years ago**

These machines are still perfectly good and in daily use in places. I even saw two model Bs driving a star plotting table at the Greenwich Observatory. However, as excitement levels go nowadays they must rate just above the observation of liquid paint becoming solid. Consequently anyone with the skill, knowledge and time to support these machines is doing something else. There will always be a few individuals with the desire to keep old objects functional but I am afraid that we can't support those old machines here. If anyone does know of an active society I can pass on the information.

Gary Taylor from Wrexham has four questions:

While I was reading a recent edition of the Farnell Electronics catalogue, I noticed that they sold a '32-bit RISC workstation board'. After reading the rest of the info it turned out to be an A5000 with 2Mb of RAM. In the description, the catalogue mentioned that it could run X-Windows and this software was available from Acorn. Is this true? If so, how much RAM and hard disc space would be needed to run X-Windows? Would I need an ARM3 like the A5000? Are there any PD versions of X-Windows which don't need much RAM? I realise that X is a very professional piece of kit and that using it may be more trouble than it is worth, but I am willing to have a go.

A version of X-windows was produced for the A5000 a few years ago. As far as I can remember it required a minimum of 4Mb of memory and was a bit prone to crashing and filling up your hard disc. I think now it has been refined to run on the Risc PC. Try ftp://ftp.ph.kcl.ac.uk/pub/acorn/RiscBSD/.

I have seen 8086 PCs with hard disc going for around £20. Would it be possible to link one to my A3010 through the Serial port and access its hard disc? Also, is there any way of connecting an Amiga external drive to my A3010? Would it be possible to network to my Amiga (or Amstrad Notepad for that matter)?

You can connect two computers by their serial links – all you need is to write the software for both ends. Let me know when you have, I am sure it will be useful to others. This sort of network software – using the serial link – is built into the Macintosh operating system. As for the Amiga external drive, I think that is a proprietary system and I don't know of any adaptor cards and software drivers.

To network your Amiga you will need to install an ethernet card in it as well as your Acorn. At a guess I think it would cost about £600 for the hardware and software. Is it really worth the expense?

I have tried to convert some PD Mac fonts given to me by a friend using !T1toFONT but they didn't have any AFM files with them. The READ_ME inside !T1toFONT says that they are no longer needed and to use Acorn Extended Latin for the Encoding. It still didn't work, what's wrong with it? Is it the MacHFS which I used it to read the Mac Discs?

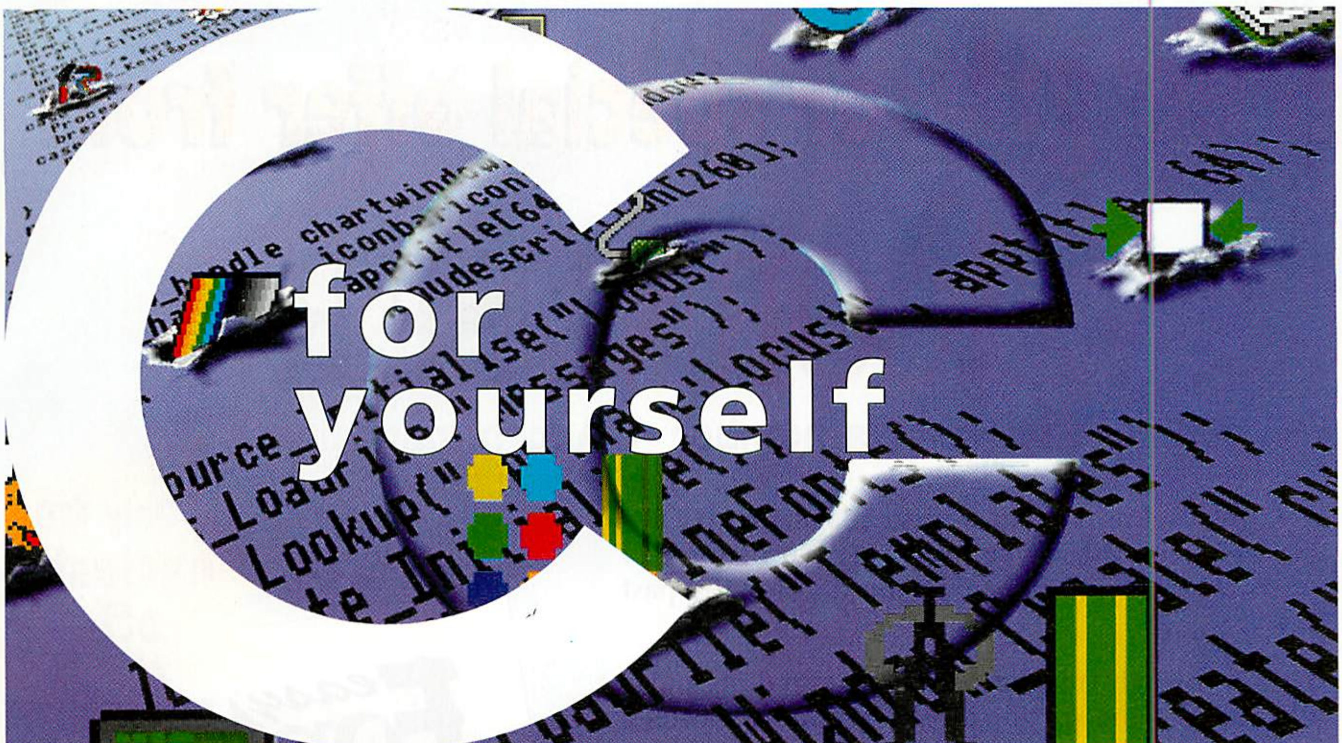
I have no idea about the fonts – maybe a reader has some information.

Will it be possible to upgrade our machines to the standard of the Oracle NC and will the NC run existing software? Will they be sold by existing Acorn dealers, and does the Acorn NetStation run RISC OS? (I had to ask due to the move by Acorn to the Mac OS).

As I understand it, the NC (network computer) will have no magnetic media storage so you can't run existing software on it, as you can't load it.

Let's say it again – Acorn is not moving over to the Mac OS. The NC will have an ARM chip in it and have RISC OS under the surface running it. It is likely that it will be available from many outlets, not just Acorn dealers. AU

JACK KREINDLER



C for yourself

Steve Mumford explains the correct naming of files for saving

Last issue I started to describe the principles of saving a file by dragging an icon, and wound up with an application that performed the dragging part, but didn't really care about what happened to the icon after that. In this issue, I've expanded the library so it's possible to determine where a dragged icon was dropped, and from there decide what filename you should use in order to save it in the right place.

Because a dragging operation can span a number of *Wimp_Poll* cycles, it's important to keep track of the nature of the drag so the program can decide how it treats any *User_DragBox* messages. I've done this with a simple global variable. It's not particularly vital if your application only uses one drag box, most often in its save window, but if more than one exists, things could get particularly confusing without it.

There's a new data structure in this version of *AULib*, and it's used to hold information about the position of the mouse:

```
typedef struct pointer_data {
int mouse_x;
long int        mouse_y;
long int        button_state;
long int        win_handle;
long int        icon_handle;
} pointer_data;
```

Once you've declared a structure of this type, you can call **au_getpointerinfo()** to grab the current state of the mouse – this information can then be used for a variety of purposes. In our case we're going to paraphrase the data and send a Data_Save message to the filer. As shown below, the **au_getpointerinfo()** function takes an address of a structure as its parameter, so that it can move all the resultant information into it directly.

```
pointer_data pointer_info;
au_getpointerinfo(&pointer_info);
```

We then check to see whether we were in the middle of a filesave drag, by using the global variable mentioned earlier. Because the user should have typed a leafname (the final bit of the full pathname of a file, such as **TextFile** in the example **ADFS::0.$.Docs.TextFile**) into the field below the draggable icon, we must interrogate it and retrieve the string before we go any further.

I didn't have a mnemonic for the number of this particular writable icon up till now, so I **#define**d one and included it with the rest at the top of the file – in this way, if you change the numbering of your window templates, it's very easy to reflect those changes in the C sourcecode. An example from the disc is shown below:

```
char temp_name[256];
au_icon_get_text(temp_name,
win_data[2].win_handle, SAVE_FILE-
NAME_ICON);
```

Now we have the leafname, we can go ahead and send a message to the WIMP filer, using the new function **au_datasave()**. This takes four parameters, which are in order as follows – the first is a full **pointer_data** structure, the second is an estimated file size (so the filer can check whether it's likely to fit on a particular disc without trying), the third is a filetype and the fourth is the leafname.

```
au_datasave(pointer_info, 1024,
0xfff, temp_name);
```

At this stage, we have to sit back and wait again; the Filer will receive our message and if everything goes according to plan, it will return a **DataSaveAck** message. To complete the operation, we just wait until we're returned a value of 17, 18 or 19 from the Wimp_Poll loop, check for the DataSaveAck number and read a filename from the poll block – the name starts at byte 44 and the string is zero-terminated as normal. Just to act as a demonstration, the example program on the cover disc will pop up an information window giving the full pathname of the prospective file as soon as the user drops the save icon in an appropriate window.

This month, another program has been included on the cover disc for you to examine. It's called *Acronyms* and it's written by Gareth Duncan, it uses the *Acorn User* library for some of the features discussed in the past few months.

Acronyms is a little utility of use to anyone who wants to decipher any Usenet or e-mail messages peppered with those inconceivable abbreviations such as ROTFL, IMNSHO or even TLA. The dictionaries also contain all manner of useful computer acronyms, so if you've ever wondered about POPs, SIMMs or TAOS, Gareth's utility has all the answers. The code is nicely commented, so take a look and follow it through. AU

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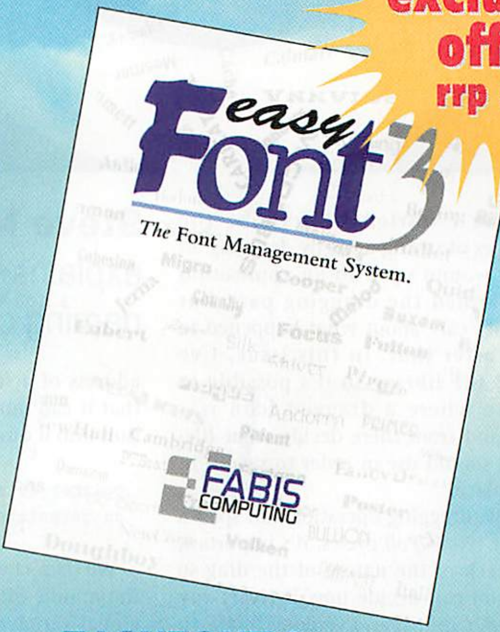
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letters



Web list

Would it be possible to have a list of Web pages that have been mentioned in the magazine published in a list similar to the advertiser's index. I find that when I'm reading the magazine I forget where the references are and it takes much searching later. Keep up the good work.
Clint Lees, clintlees@nature.demon.co.uk

That's an idea, we'll take a look at the feasibility however when copy is produced by lots of different people it may not work ... but we're not promising anything.

A question of cost

I am interested in going online with Argonet. Before I can do this my parents have said that I have to find out the costs of running it. I have got a 14000bps modem all ready to go, but I need the total cost and an estimate of how much the phone bill will be every month. I am asking you the question because I really don't have a clue.
Gareth Porter, Wales (E-mailed through college on the hopeless PC's! g3168gp@gorseinon.co.uk)

Argonet has the advantage of understanding Acorn machines and providing software, but it isn't the only choice. We can't give you a list of all the Internet Service Providers and their comparative costs but typically you can expect to pay between £10-£20 per month for the provider and £15 per month for the telephone bill but it really does depend on what you do – the more use you put it to the higher the cost is going to be.

Wrong price

In last month's letters page a price of £28 + VAT was quoted for an interface from Pyramid Computer Services. This should read £58 + VAT.

Bigger red carets

I am the IT co-ordinator in a school for children with physical disabilities, some of whom are visually impaired. I can enlarge the font and enlarge the view of the page, but the red caret does not get any thicker, and if you can't see the insertion point you can't edit your text.

The caret is called ptr_write and it resides in Apps.Resources.Wimp.Sprites22. Although I can modify ptr_write using !Paint I can't save the modified version because Resources is read only and access to Resources is greyed out.Can you or any reader suggest a way round this?
Roger Dearden, Primrose Hill School, Burnley, Lancs

Unfortunately changing the sprite will not change the caret as it appears in a document. Even if successful you'll only alter the pointer when it appears as a caret.

Future issues

I own a 3010 which I have upgraded to 4Mb RAM, and with a 240Mb IDE hard drive. Although I have had this since November 1993, I have only recently begun to buy your magazine on a regular basis and I wondered whether you could help me with a few matters.

I have the PD 'Out to Lunch' screensaver, which has several different displays, but I have been unable to add any further ones. How can I do this? There must be other ones on the market. Would you be able to include any on future discs?

Although I am now able to operate the computer better than when I took it out of the box, as yet I have not been able to do very much in the way of writing any programs. All the courses for computers at my local college are purely for the PC range, so would you be able to put any 'Programming for Beginners' in future issues?

Last, but not least, is there any method of reducing the amount of space available in the Module area? I have tried dragging the bar back, but depending on what programs are being run, it will only go back so far. Quitting them, typing 'RMTidy, RMClear, and RMKill' do not seem to have much effect. So far, the only way I have been able to do this is by doing a hard reset.

I hope that you will be able



to answer some of these queries for me.
Glenn White, Bewdley, Worcs

Personally I've never seen any other Out to Lunch savers, but your best bet is to try the PD libraries. When it comes to programming there is a problem. The readership of Acorn User has been developing over 12 years so we have everyone from extreme beginners such as yourself to those with a thorough understanding of their machine. This makes choosing which series to print quite tricky as we don't want to bore half the readership, and go over the top the other half.

However we do have the C and the arcade games programming articles at present. To go to a lower level of skill is even more problematical as in a monthly magazine we cannot cover much ground, and it's very slow. In The Micro User in the mid-80s they ran a very basic programming series for over two years, and didn't get very far.

No, there's no way of reducing the module area, except occasionally when there's some free space at the end. Having said that there is a PD program which will free up space within the module area if it can. It's not totally foolproof and may crash the machine, but it usually works.

Promoting the Acorn platform

I have read in the Acorn press recently, with interest, about the products of Innovative Media Solutions (IMS). We should all acknowledge what this company has done in its efforts to allow Microsoft's and Dorling Kindersley's CD-ROMs to run on Acorn RISC OS without a PC card.

The reaction by these companies, who would never consider releasing their products on our platform, is interesting as they see the elegance of their products running within the Acorn desktop.

However, here is my gripe!

It seems odd to me that these products, which are recognised as world class, are not promoted by any of the concerned parties for use on the Acorn platform. Why are they not advertised within *Acorn User, Parents and Computers* etc, to tell readers that certain titles will run on the Acorn machine? Dorling Kindersley never promotes this within its adverts in the mainstream press.

Could the PC to Acorn 'reader' be included, so that I could buy my copy of *The Way Thing's Work* at my local branch of WH Smiths?

Surely it is good and essential marketing for an Acorn machine, which is 'the Educational Market Leader' to let people know about these educational products.

It seems that you have to play Sherlock Homes to find or know that these products are available. It may even persuade buyers/parents to our declining market?
Brian Ferris, London

We spoke to IMS about this and they said that the problem was their success — they can't keep up with the demand, even when they don't advertise.

Using AU discs

I run a fortnightly lunchtime computer club for 9 to 10-year-olds at Sedgeberrow First School, Evesham where my son is a pupil. The school has purchased copies of the *Acorn User* CD-ROMs and I would like to use some of the material on previous AU cover discs during club time.

Am I correct in understanding that it would be acceptable to use AU clipart (such as by Nigel Gatherer '93/4) and AU games and programs marked as PD? It might also be quite useful to have the use of such games as *FigureIT* by Martin Goldberg (Jan 94) but presumably one has to contact the author for permission to use these in a school environment, and often no contact address is given. The school has only one computer in each classroom and is not networked, while the use of AU programs would be limited to the lunchtime Computer Club.

Your guidance in this matter would be much appreciated.
Mrs D Rowlinson, Broadway, Worcs

Strictly speaking, the programs on the CDs and cover discs are copyright and unusable unless specified as PD or "you can use this..." However I doubt that any contributor to Acorn User would get upset at having their program used as long as no profit was being made from it.

If you use a shareware program you should send the required contribution to the programmer.

Sorting out Simon

With reference to a problem experienced by one of your readers who had difficulty saving *Simon the Sorcerer* games when running the game from floppy discs.

The problem lies in the fact that this game was originally developed for PC and as a result the accompanying manual is not too clear when the game is run on the Acorn platform... it merely stated that games are saved onto a blank disc.

This isn't quite the case. Set up the disc you wish to save games on as follows:

- Format your disc
- Make a new directory called !Simon – which will show up as an application
- Open this application – by pressing SHIFT and double-clicking with SELECT
- Make a new directory within !Simon called Saved

The program will then save stages in the game within this Saved directory in the form save/001, save/002... etc

I did contact Gamesware about this omission from the manual when I was getting one of two of the discs updated recently, and I think that they now include a slip of paper with the boxed game to clarify the situation.
Mr J Dolecki, Bolton

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Risc PC700	5Mb	HD540	14" monitor	(ACB77/AKF60)	£1549
Risc PC700	5Mb	HD540	17" monitor	(ACB77/AKF91)	£1925

Eight speed CD ROM drive £47 with Risc PC700 5Mb

Risc PC700	10Mb	HD1Gb	14" monitor	(ACB75/AKF60)	£1799
Risc PC700	10Mb	HD1Gb	17" monitor	(ACB75/AKF91)	£2175

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Upgraded Risc PC

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For a 1620Mb disc add £24, or add £60 for a 1620Mb disc

Alternative Monitors

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The Panasonic drives require a SCSI interface.

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Ordered with Risc PC	£234
Exchange from SXL/33	£234
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Ordered with Risc PC	£175
Exchange from SXL/33	£175
PC card 486SXL/33 ACA52	£234
Ordered with Risc PC	£116

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For Risc PC and A7000
Prices at 10th Aug 1996

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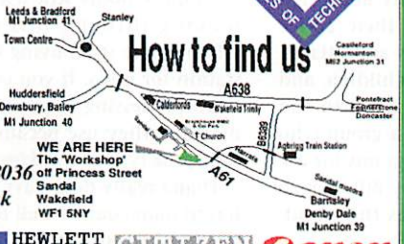
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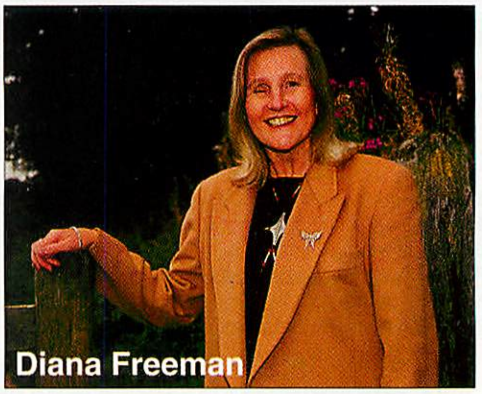
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The Regan files


Diana Freeman

> **The superhighway is coming, it is going to lead to some changes in the education system and we do not know what these are yet**

We Acorn fans tend to be a little blinkered in our approach to life. Our devotion to the small Cambridge computer firm tends to colour how we view people. So, just as Dominic Diamond is known to us as some Scot in glasses who came to the Harrogate shows, Diana Freeman will probably be remembered as the woman who got an Archimedes in the *Blue Peter* garden.

'We had been doing some work with BBC Education; the BBC got in touch as a result, and we did a job for them,' she explains. 'We had to monitor birds coming to feed in the *Blue Peter* garden. This we did by having an Archimedes sitting in the garden's greenhouse, with *Weather Reporter* running to record the weather. We also monitored how heavy the birds which landed on the feeder were and how much they ate.

'This was done along with Peter Holden from the RSPB and some local children. The data was saved on the Archimedes and could be taken back into their schools – which also had Archimedes.'

Why was Diana involved? Because she was a known computer expert in this field. Diana Freeman is from The Advisory Unit: Computers in Education, and if there is anything you need to know about IT and the curriculum then this is the place to contact. Her job has so many facets that it's hard to describe all of them in a single interview: advising on IT and the curriculum, organising training courses, developing software and crystal ball gazing.

Diana read Geography at university and originally worked for Reader's Digest in their 'coffee table book' section, producing maps and atlases. She got into teaching when she had children, and her involvement in computing started in the 1970s when she was invited to join a group who were looking at producing small programs for use in teaching. This group was set up by Bill Tagg, a man who many people remember as the grandfather of IT education in England.

'In the 1980s he invited me to join the Advisory Unit, which was then an offshoot of what is now Hertfordshire University. It was then taken over by the Local Education Authority, and eventually we set up as an independent centre. It has gone from strength to strength, so much so that teachers are willing to travel from all over the country to take courses.

'When I started, Hertfordshire had a computer system where each school had a terminal to a mainframe. It was a bit like using the Internet today except you had no screen, only a modem and telephone and you used a teletype machine – all you got out at the other end were letters printed on paper. Then came the 380, ZX spectrum, the BBC and Archimedes.

'I think the world is moving to PC's – you cannot deny that this is taking place – but what matters in schools is the software. If there has been a huge bank of educational software built up then people will want to capitalise on that. There is still a place for old machines, and of course schools never throw anything away.

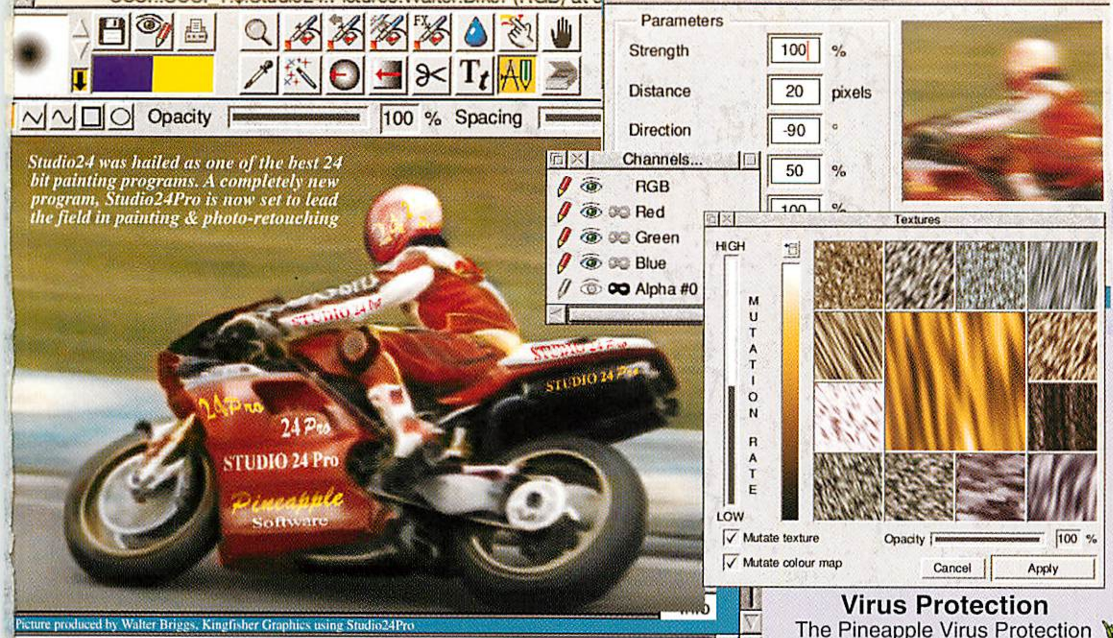
'Some schools still use BBC Micros. I was just looking through this morning and noticed schools were still buying the weather data-logging station for BBCs. If you want children to do some word processing it really does not matter which machine they use because the principles are the same; the type of *thinking* they do is the same.'

Diana really does have to crystal ball gaze – she has to plan courses well in advance, to foresee the teachers' needs, and to advise NCET about cutting-edge technology. Her latest idea is to see how hand-held GPS systems can be used in schools.

'What is the education of the future going to be like? Are children going to come together just to socialise? As they'll be able to get hold of the information they need and to do the work that they need on-line, do they need libraries? There are all these big questions. The superhighway is coming, it is going to lead to some changes in the education system and we do not know what these are yet. But the DFE are already looking into it, and the debate is happening *now*.'

To Acorn fans, Diana may be the person who put an Archie in the *Blue Peter* garden – a parochial view of someone who has trekked the Sahara and been arrested while photographing riots in Algeria. Both of these are occupational hazards when collecting data for her geography programs, and while Diana would be back doing the same in a flash, she's kept in her job by a firm conviction; that she can make a real difference to how children are educated.

Jill Regan AU



Picture produced by Walter Briggs, Kingfisher Graphics using Studio24Pro

Features

- Fast Virtual Memory
- Random mutated texture generation
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- Over 40 pre-defined filters including Spin blur, Motion blur, Lighting etc, etc.
- PhotoCD and Scanner input
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- Built in Draw file creation
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- Up to 16, 8 bit mask channels
- Filter preview window (shown above left)

'Many Acorn User front covers have been created from scratch using this program alone, concrete proof of the power of this creative tool'. - ***Acorn User March 96***

Studio24Pro
£149.87 inc vat



Removable Harddrive System
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The removable harddrive system fits into a 5¼" drive slot in the RiscPC and harddrives are available in many sizes which can simply plug in and out of the slot as required. The drive may be locked in place to prevent unauthorized removal. For total security the drive may be removed and stored in a safe place to prevent unauthorized access to your data. Because the removable drives are available in any size (up to at least 4Gb) they are also ideal for use as backups for existing drives, and may be transported between different computers. See opposite for NEW LOW prices

PAL TV Coders



PLC/3 £104.57

The PLC/3 PAL TV Coder works in any of the 'Standard' Modes, e.g. mode12 and 15 on all Acorn computer models. The PLC/3 has a 15 pin RGB output for the monitor, a BNC for video and an S-VHS connector for S-Video. The PLC/3 will work with RiscPC computers although the AKF60, AKF85 and AKF90 will not work at the same time.



AVK/3 £325.00

The AVK/3 will work with all computer models in all screen modes up to 800 x 600 resolution in 16 million colours. It has a remote control with facilities for zooming, freezing & panning the TV picture. Ideal for lectures and demonstrations etc. The AVK/3 includes all connecting cables including a SCART which gives TV frequency RGB O/P for large screen TV's, a phono socket for composite video and an S-VHS socket for S-Video.

ArtWorks Video Tutorial



A Brand new product from Pineapple is this VHS Video Tutorial covering the use of ArtWorks.
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ArtWorks Video Tutorial £19.99

!NEW!

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	Separately	with RiscPC
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DX4-100 Card	£349.00	£229.00
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StrongARM	£279.00	£116.32

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